

=> d his ful

(FILE 'HOME' ENTERED AT 15:30:42 ON 21 JUN 2007)

FILE 'REGISTRY' ENTERED AT 15:31:04 ON 21 JUN 2007

L2 STR  
 L4 563 SEA SSS FUL L2  
 L14 STR  
 L16 18 SEA SUB=L4 SSS FUL L14

FILE 'HCAPLUS' ENTERED AT 17:05:12 ON 21 JUN 2007

L17 7 SEA ABB=ON PLU=ON L16  
 D STAT QUE L17  
 D IBIB ABS HITSTR L17 1-7

FILE 'REGISTRY' ENTERED AT 17:06:15 ON 21 JUN 2007

L19 STR  
 L21 553 SEA SSS FUL L19  
 L23 STR  
 L24 3 SEA SUB=L21 SSS FUL L23  
 L25 550 SEA ABB=ON PLU=ON L21 NOT L24  
 L26 STR  
 L27 5 SEA SUB=L4 SSS FUL L26  
 L28 540 SEA ABB=ON PLU=ON L4 NOT (L16 OR L27)

FILE 'HCAPLUS' ENTERED AT 17:11:07 ON 21 JUN 2007

L29 1674 SEA ABB=ON PLU=ON L25  
 L30 6 SEA ABB=ON PLU=ON L24  
 L31 6 SEA ABB=ON PLU=ON L27  
 L32 1680 SEA ABB=ON PLU=ON L28  
 L33 0 SEA ABB=ON PLU=ON (L30 OR L31) NOT L17  
 D STAT QUE L33  
 L34 215 SEA ABB=ON PLU=ON L28/P  
 L35 211 SEA ABB=ON PLU=ON L29 AND L34  
 L36 116181 SEA ABB=ON PLU=ON ("HALOGENATION/CV OR "HALOGENATION (L)  
 AGENTS"/CV OR "HALOGENATING AGENTS"/CV OR "OXIDATIVE HALOGENATI  
 ON"/CV OR BROMINATION/CV OR CHLORINATION/CV OR FLUORINATION/CV  
 OR IODINATION/CV OR "HALOGENATION CATALYSTS"/CV OR "HALOGENATIO  
 N KINETICS"/CV OR HALOGENS/CV) OR ?HALOGENAT?  
 L37 1280589 SEA ABB=ON PLU=ON ("REDOX REACTION"/CV OR REDUCTION/CV) OR  
 ?REDUCT?  
 L40 5 SEA ABB=ON PLU=ON L29 AND L36 AND L37  
 L41 4 SEA ABB=ON PLU=ON L40 NOT (L17 OR L33)  
 L42 2 SEA ABB=ON PLU=ON L41 AND L35  
 D STAT QUE L42  
 D IBIB ABS HITSTR L42 1-2  
 L43 22 SEA ABB=ON PLU=ON L29 AND L36 AND L32  
 L44 5 SEA ABB=ON PLU=ON L36 AND L37 AND L32  
 L45 16 SEA ABB=ON PLU=ON (L43 OR L44) NOT (L17 OR L33 OR L42)  
 D STAT QUE L45  
 D IBIB ABS HITSTR L45 1-16  
 L46 661 SEA ABB=ON PLU=ON ("LEMAIRE M"/AU OR "LEMAIRE M C"/AU OR  
 "LEMAIRE M J"/AU OR "LEMAIRE M V"/AU OR "LEMAIRE M VIOLAINE"/AU  
 OR "LEMAIRE M Y"/AU) OR ("LEMAIRE MARC"/AU OR "LEMAIRE MARC  
 LIONEL"/AU)  
 L47 35 SEA ABB=ON PLU=ON ("SALUZZO C"/AU OR "SALUZZO CHRISTINE"/AU)

L48 15 SEA ABB=ON PLU=ON ("BERTHOD M"/AU OR "BERTHOD MICHAEL"/AU OR "BERTHOD MIKAEEL"/AU OR "BERTHOD MIKAEL"/AU)  
 L49 40 SEA ABB=ON PLU=ON (L47 OR L48) NOT (L17 OR L33 OR L42 OR L45)  
     D STAT QUE L49  
     D IBIB ABS HITSTR L49 1-40  
 L50 20 SEA ABB=ON PLU=ON L46 AND (L29 OR L32)  
 L51 5 SEA ABB=ON PLU=ON L50 NOT (L17 OR L33 OR L42 OR L45 OR L49)  
     D STAT QUE L51  
     D IBIB ABS HITSTR L51 1-5

**FILE HOME****FILE REGISTRY**

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 20 JUN 2007 HIGHEST RN 938114-25-1  
 DICTIONARY FILE UPDATES: 20 JUN 2007 HIGHEST RN 938114-25-1

New CAS Information Use Policies, enter HELP USAGETERMS for details.

**TSCA INFORMATION NOW CURRENT THROUGH December 2, 2006**

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REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

<http://www.cas.org/support/stngen/stndoc/properties.html>

**FILE HCPLUS**

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FILE COVERS 1907 - 21 Jun 2007 VOL 146 ISS 26  
 FILE LAST UPDATED: 20 Jun 2007 (20070620/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

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=> fil hcplus

FILE 'HCPLUS' ENTERED AT 17:05:12 ON 21 JUN 2007

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 PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
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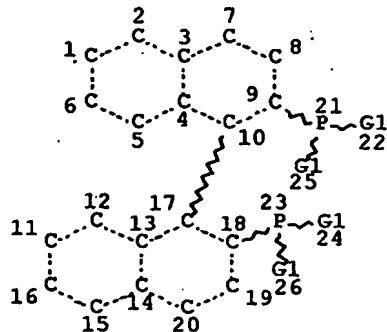
Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications. The CA Lexicon is the copyrighted intellectual property of the American Chemical Society and is provided to assist you in searching databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS, is strictly prohibited.

FILE COVERS 1907 - 21 Jun 2007 VOL 146 ISS 26  
 FILE LAST UPDATED: 20 Jun 2007 (20070620/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

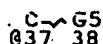
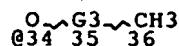
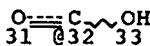
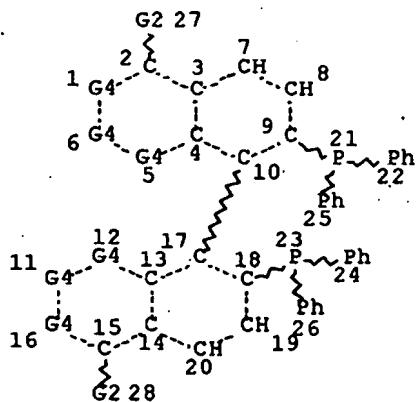
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 => d stat que 117  
 L2 STR



VAR G1=AK/CY  
 NODE ATTRIBUTES:  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 26

STEREO ATTRIBUTES: NONE  
 L4 563 SEA FILE=REGISTRY SSS FUL L2  
 L14 STR



VAR G2=AK/CN/29/32

REP G3=(0-3) C

VAR G4=CH/37

VAR G5=AK/34

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 38

STEREO ATTRIBUTES: NONE

L16 18 SEA FILE=REGISTRY SUB=L4 SSS FUL L14

L17 7 SEA FILE=HCAPLUS ABB=ON PLU=ON L16

=> d ibib abs hitstr 117 1-7

L17 ANSWER 1 OF 7 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2007:352054 HCAPLUS Full-text

DOCUMENT NUMBER: 146:380115

TITLE: Preparation of binaphthyls as asymmetric ligands

INVENTOR(S): Shimada, Toyoshi; Kakiuchi, Kiyozo

PATENT ASSIGNEE(S): Nara Institute of Science and Technology, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 27pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

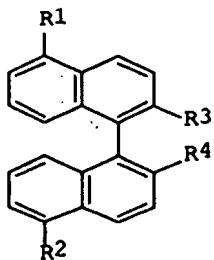
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP. 2007077022	A	20070329	JP 2005-262628	20050909
PRIORITY APPLN. INFO.:			JP 2005-262628	20050909
OTHER SOURCE(S):		MARPAT 146:380115		

GI



I

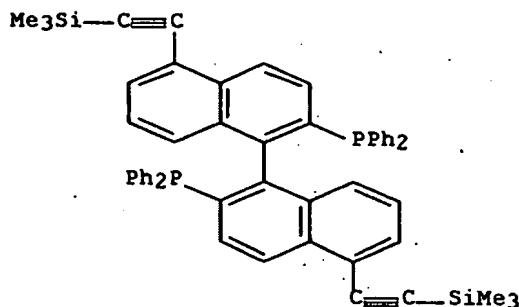
AB Binaphthyls I [R1, R2 = H, (un)substituted alkyl, alkenyl, alkynyl, aryl, silyl; R1 = R2 ≠ H; R3, R4 = POR52, PR52; R5 = (un)substituted Ph] are prepared by oxidation of 2,2'-bis(diphenylphosphino)-1,1'-binaphthyls, iodination of the resulting oxides with bis(pyridine)iodonium tetrafluoroborate (II), followed by cross-coupling of the obtained iodinated binaphthyls with transition metals. Thus, (R)-BINAP dioxide was iodinated with II, cross-coupled with trimethylsilylacetylene in the presence of CuI and PdCl<sub>2</sub>(PPh<sub>3</sub>)<sub>2</sub>, and treated with LiAlH<sub>4</sub> to give (R)-I (R1 = R2 = C.tpbond.CSiMe<sub>3</sub>, R3 = R4 = PPh<sub>2</sub>) (III). 2-Cyclohexen-1-one was treated with III, PhB(OH)<sub>2</sub>, and Rh(acac)(C<sub>2</sub>H<sub>4</sub>)<sub>2</sub> to give 99% optically active 3-phenylcyclohexan-1-one with 97.3% ee.

IT 871350-62-8P

RL: CAT (Catalyst use); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(preparation of binaphthyls as asym. ligands by cross-coupling of iodobinaphthyls)

RN 871350-62-8 HCPLUS

CN Phosphine, [(1R)-5,5'-bis[(trimethylsilyl)ethynyl][1,1'-binaphthalene]-2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)



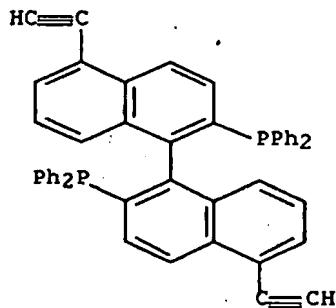
IT 871350-64-0P 930794-26-6P

RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(preparation of binaphthyls as asym. ligands by cross-coupling of iodobinaphthyls)

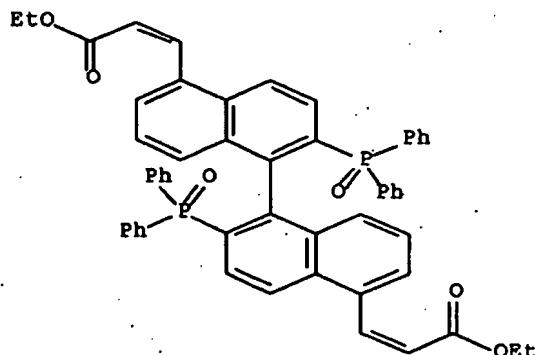
RN 871350-64-0 HCAPLUS

CN Phosphine, [(1R)-5,5'-diethynyl[1,1'-binaphthalene]-2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)



RN 930794-26-6 HCAPLUS

CN 2-Propenoic acid, 3,3'-([(1R)-2,2'-bis(diphenylphosphinyl)[1,1'-binaphthalene]-5,5'-diyl]bis-, 1,1'-diethyl ester, (2E,2'E)- (CA INDEX NAME)



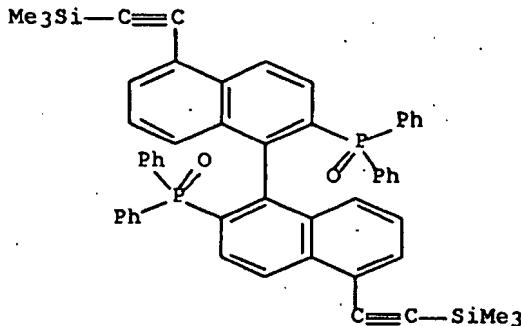
IT 871350-60-6P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

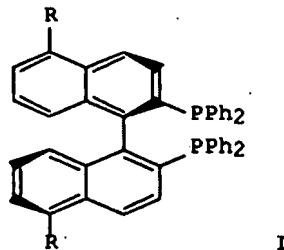
(preparation of binaphthyls as asym. ligands by cross-coupling of iodobinaphthyls)

RN 871350-60-6 HCAPLUS

CN Phosphine oxide, [(1R)-5,5'-bis[(trimethylsilyl)ethynyl][1,1'-binaphthalene]-2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)



L17 ANSWER 2 OF 7 HCPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2005:1146696 HCPLUS Full-text  
 DOCUMENT NUMBER: 144:51305  
 TITLE: Facile preparation of a new BINAP-based building block, 5,5'-diiodoBINAP, and its synthetic application  
 AUTHOR(S): Shimada, Toyoshi; Suda, Masahiko; Nagano, Toyohiro; Kakiuchi, Kiyomi  
 CORPORATE SOURCE: Department of Chemical Engineering, Nara National College of Technology, Nara, 639-1080, Japan  
 SOURCE: Journal of Organic Chemistry (2005), 70(24), 10178-10181  
 CODEN: JOCEAH; ISSN: 0022-3263  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 144:51305  
 GI



AB Nonracemic bis(diphenylphosphino)binaphthylidiphosphines I ( $R = I$ ,  $Me_3SiC.tpbond.C$ ,  $HC.tpbond.C$ ) are prepared chemoselectively using a chemo- and regioselective iodination of ( $R$ )-BINAP  $P,P'$ -dioxide with bis(pyridine)iodonium tetrafluoroborate as the key step. Treatment of ( $R$ )-BINAP dioxide with 3 equivalent of bis(pyridine)iodonium tetrafluoroborate at  $25^\circ$  for 20 h gives the dioxide of I ( $R = I$ ) in 92% yield with no formation of regioisomers; reaction of ( $R$ )-BINAP dioxide with 2 equivalent of bis(pyridine)iodonium tetrafluoroborate for at  $-30^\circ$  gives 5-iodo-2,2'-bis(diphenylphosphoryl)-1,1'-binaphthyl in 15% yield because of difficulty in separating the monoiodo compound from starting material. Deoxygenation of the

dioxide of I ( $R = I$ ) with trichlorosilane gives I ( $R = I$ ); Sonogashira coupling of the dioxide of I ( $R = I$ ) with trimethylsilylacetylene followed by deoxygenation with Me triflate and lithium aluminum hydride gives I ( $R = Me_3SiC.tpbond.C$ ), and cleavage of the silyl groups with tetrabutylammonium fluoride yields I ( $R = HC.tpbond.C$ ). Enantioselective rhodium-catalyzed addition of phenylboronic acid to 2-cyclohexen-1-one in the presence of either BINAP or 5,5'-disubstituted binaphthylidiphosphines yields nonracemic 3-phenylcyclohexanone in 97-99% yields and in 97% ee; while I ( $R = I$ ,  $Me_3SiC.tpbond.C$ ) provide 3-phenylcyclohexanone with similar yields and enantioselectivities to those obtained using (R)-BINAP, reaction in the presence of I ( $R = HC.tpbond.C$ ) leads to no product.

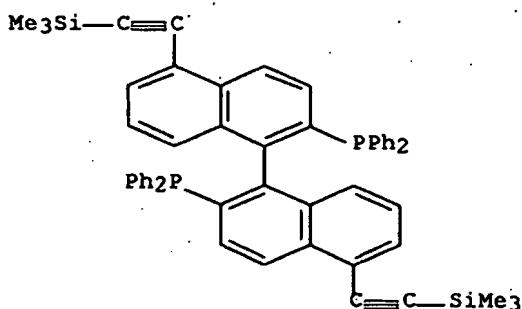
IT 871350-62-8P

RL: CAT (Catalyst use); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

(asym. rhodium-catalyzed addition of phenylboronic acid to cyclohexenone using binaphthylidiphosphines as chiral ligands)

RN 871350-62-8 HCPLUS

CN Phosphine, [(1R)-5,5'-bis[(trimethylsilyl)ethynyl][1,1'-binaphthalene]-2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)



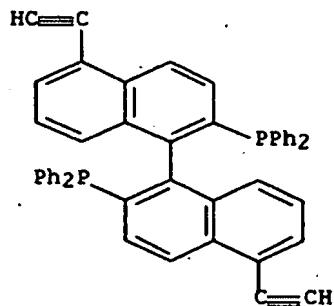
IT 871350-64-0P

RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

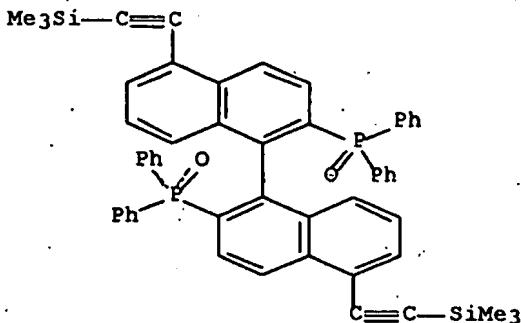
(asym. rhodium-catalyzed addition of phenylboronic acid to cyclohexenone using binaphthylidiphosphines as chiral ligands)

RN 871350-64-0 HCPLUS

CN Phosphine, [(1R)-5,5'-diethynyl[1,1'-binaphthalene]-2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)



IT 871350-60-6P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (asym. rhodium-catalyzed addition of phenylboronic acid to cyclohexenone using binaphthylidiphosphines as chiral ligands)  
 RN 871350-60-6 HCAPLUS  
 CN Phosphine oxide, [(1R)-5,5'-bis[(trimethylsilyl)ethynyl][1,1'-binaphthalene]-2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

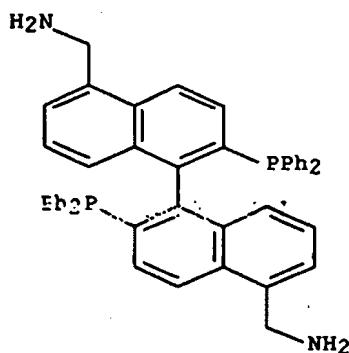
L17 ANSWER 3 OF 7 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2004:626140 HCAPLUS Full-text  
 DOCUMENT NUMBER: 141:296154  
 TITLE: Enantioselective catalytic asymmetric hydrogenation of ethyl acetoacetate in room temperature ionic liquids  
 Berthod, Mikael; Joerger, Jean-Michel; Mignani, Gerard; Vaultier, Michel; Lemaire, Marc  
 AUTHOR(S):  
 CORPORATE SOURCE: UMR 5181, UCBL, CPE, Laboratoire de Catalyse et Synthese Organique, Villeurbanne, 69622, Fr.  
 SOURCE: Tetrahedron: Asymmetry (2004), 15(14), 2219-2221  
 CODEN: TASYE3; ISSN: 0957-4166  
 PUBLISHER: Elsevier B.V.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 141:296154  
 AB Ruthenium complexes of bis-ammonio-substituted BINAP ligands catalyze asym. hydrogenation of Et acetoacetate in imidazolium, pyridinium and phosphonium room-temperature ionic liqs. 4,4'-Bis(aminomethyl)-BINAP and 5,5'-bis(aminomethyl)-BINAP were protonated to give corresponding hydrobromides and complexed in situ with [Ru(η<sup>3</sup>-2-methylallyl)2(COD)] to give ruthenium dibromo complexes (9, 10), active in asym. hydrogenation of Et acetoacetate in 1-butyl-3-methylimidazolium hexafluorophosphate (1), N,N-bis(trifluoromethanesulfonyl)imide (2), tetrafluoroborate (3), 1-butylpyridinium N,N-bis(trifluoromethanesulfonyl)imide (4), tricyclohexyl(tetradecyl)phosphonium chloride (5) and N,N-bis(trifluoromethanesulfonyl)imide (6) ionic liqs. at room temperature. Complete conversion and good selectivity were obtained. Recycling by simple extraction with pentane was also possible.  
 IT 681244-51-9  
 RL: CAT (Catalyst use); RCT (Reactant); RACT (Reactant or reagent); USES

## (Uses)

(protonation, complexation; asym. hydrogenation of Et acetoacetate in ionic liqs. at room temperature in presence of ruthenium modified ammoniomethyl BINAP catalyst)

RN 681244-51-9 HCAPLUS

CN [1,1'-Binaphthalene]-5,5'-dimethanamine, 2,2'-bis(diphenylphosphino)-, (1R)- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 4 OF 7 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:546440 HCAPLUS Full-text

DOCUMENT NUMBER: 141:107944

TITLE: Diphosphines, preparation and uses thereof for

manufacture of ligands for metal complex catalysts

Lemaire, Marc; Saluzzo, Christine; Berthod, Mikael

Rhodia Chimie, Fr.; Centre National de la Recherche Scientifique

SOURCE: PCT Int. Appl., 78 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

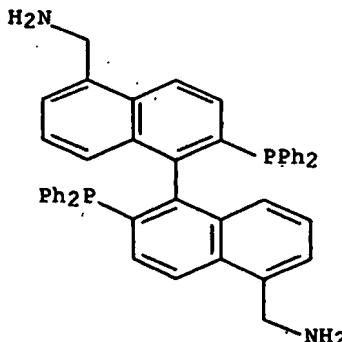
LANGUAGE: French

FAMILY ACC. NUM. COUNT: 2

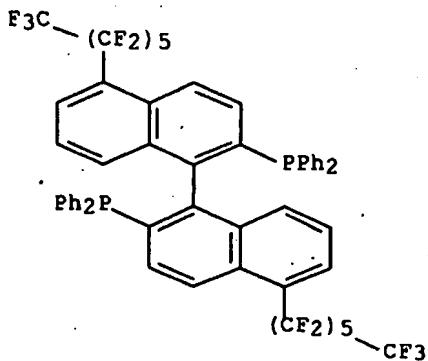
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004056483	A1	20040708	WO 2003-FR3782	20031217
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
FR 2849036	A1	20040625	FR 2002-16086	20021218
FR 2849036	B1	20050520		

FR 2853653	A1	20041015	FR 2003-4392	20030409
FR 2854405	A1	20041105	FR 2003-5255	20030429
CA 2509911	A1	20040708	CA 2003-2509911	20031217
AU 2003299336	A1	20040714	AU 2003-299336	20031217
EP 1633477	A1	20060315	EP 2003-799617	20031217
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, SK				
US 2007010695	A1	20070111	US 2006-539640	20060921
PRIORITY APPLN. INFO.:				
FR 2002-16086 A 20021218				
FR 2003-4392 A 20030409				
FR 2003-5255 A 20030429				
WO 2003-FR3782 W 20031217				
OTHER SOURCE(S): CASREACT 141:107944; MARPAT 141:107944				
AB	Binaphthyl-2,2'-diphosphines having groups in the 5 and 5' positions are manufactured and exhibit complexing ability with Rh, Ru, Re, Ir, Co, Ni, Pt, or Pd to form catalysts for reactions such as asym. hydrogenation. A typical asym. hydrogenation catalyst was manufactured by oxidation of (S)-BINAP, bromination of the resulting diphosphine oxide, reaction of the resulting diphosphine oxide 5,5'-dibromide with Cu(CN)2, reduction of the resulting diphosphine oxide 5,5'-dicyanide with PhSiH3, reduction of the resulting diphosphine 5,5'-dicyanide with LiAlH4, polymerization of the resulting (S)-5,5'-bis(aminomethyl)BINAP with tolylene 2,6-diisocyanate, and complexing the resulting polyurea with Ru.			
IT	681244-51-9P 701935-24-2P 701935-25-3P 709640-82-4P 717137-70-7P 717908-79-7P			
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)				
(5,5'-disubstituted binaphthyl)diphosphines for manufacture of monomeric and polymeric ligands for metal complex catalysts for asym. reactions)				
RN	681244-51-9 HCPLUS			
CN	[1,1'-Binaphthalene]-5,5'-dimethanamine, 2,2'-bis(diphenylphosphino)-, (1R)- (9CI) (CA INDEX NAME)			

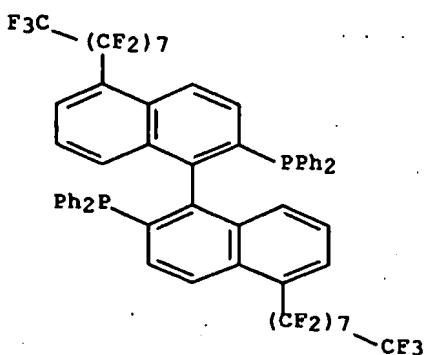


RN 701935-24-2 HCPLUS  
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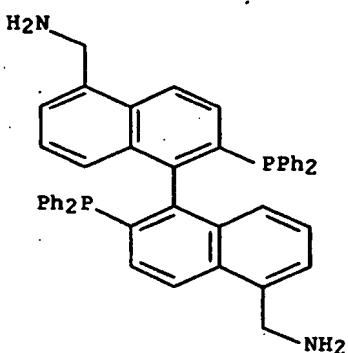
RN 701935-25-3 HCAPLUS

CN Phosphine, [(1R)-5,5'-bis(neptadecafluoroctyl)[1,1'-binaphthalene]-2,2-diyl]bis[diphenylphosphino]- (9CI) (CA INDEX NAME)



RN 709640-82-4 HCAPLUS

CN [1,1'-Binaphthalene]-5,5'-dimethanamine, 2,2'-bis(diphenylphosphino)-, (1S)- (9CI) (CA INDEX NAME)



RN 717137-70-7 HCAPLUS

CN Poly[iminocarbonylimino(2-methyl-1,3-phenylene)iminocarbonyliminomethylene [(1S)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-5,5'-diyl]methylene] (9CI) (CA INDEX NAME)

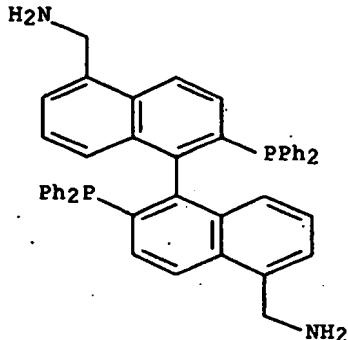
\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

RN 717908-79-7 HCPLUS  
CN [1,1'-Binaphthalene]-5,5'-dimethanamine, 2,2'-bis(diphenylphosphino)-, (1S)-, polymer with 1,3-diisocyanato-2-methylbenzene (9CI) (CA INDEX NAME)

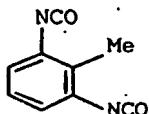
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CRN 709640-82-4  
CMF C46 H38 N2 P2



CM 2

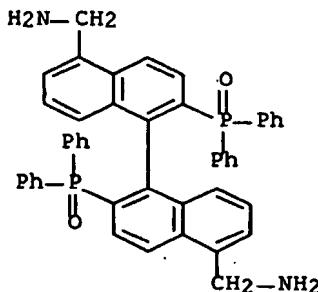
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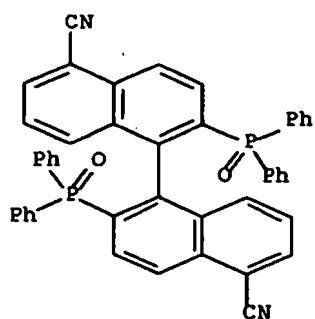
IT 717137-73-0P

RL: IMF (Industrial manufacture); PREP (Preparation)  
(intermediate; 5,5'-disubstituted binaphthylidiphosphines for manufacture of monomeric and polymeric ligands for metal complex catalysts for asym. reactions)

RN 717137-73-0 HCAPLUS

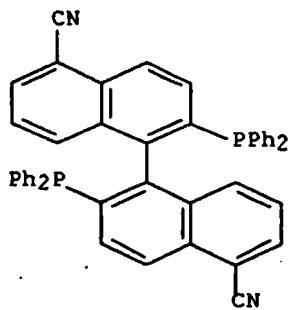
CN [1,1'-Binaphthalene]-5,5'-dimethanamine, 2,2'-bis(diphenylphosphinyl)-  
(9CI) (CA INDEX NAME)IT 681244-41-7P 681244-45-1P 701935-19-5P  
709640-80-2P 709640-81-3P 717908-78-6PRL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
(Reactant or reagent)(intermediate; 5,5'-disubstituted binaphthyl diphenylphosphines for manufacture of  
monomeric and polymeric ligands for metal complex catalysts for asym.  
reactions)

RN 681244-41-7 HCAPLUS

CN [1,1'-Binaphthalene]-5,5'-dicarbonitrile, 2,2'-bis(diphenylphosphinyl)-,  
(1R)- (9CI) (CA INDEX NAME)

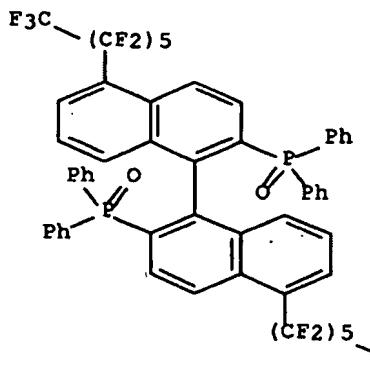
RN 681244-45-1 HCAPLUS

CN [1,1'-Binaphthalene]-5,5'-dicarbonitrile, 2,2'-bis(diphenylphosphino)-,  
(1R)- (9CI) (CA INDEX NAME)



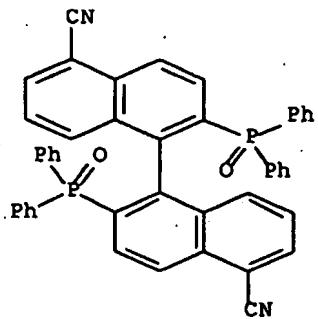
RN 701935-19-5 HCPLUS

CN Phosphine oxide, [(1R)-5,5'-bis(tridecafluorohexyl){1,1'-binaphthalene}-2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)



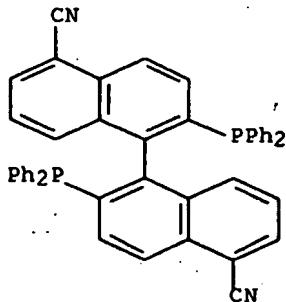
RN 709640-80-2 HCPLUS

CN [1,1'-Binaphthalene]-5,5'-dicarbonitrile, 2,2'-bis(diphenylphosphinyl)-, (1S)- (9CI) (CA INDEX NAME)



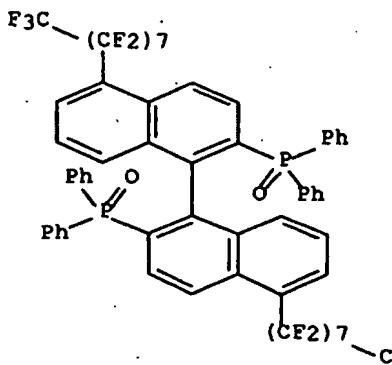
RN 709640-81-3 HCPLUS

CN [1,1'-Binaphthalene]-5,5'-dicarbonitrile, 2,2'-bis(diphenylphosphino)-, (1S)- (9CI) (CA INDEX NAME)



RN 717908-78-6 HCPLUS

CN Phosphine oxide, [(iS)-5,5'-bis(heptadecafluoroctyl)[1,1'-binaphthalene]-2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)]



REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 5 OF 7 HCPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:515337 HCPLUS Full-text

DOCUMENT NUMBER: 141:71716

TITLE: Chiral 5,5'-disubstituted binaphthyl diphosphines, processes for their preparation, and their uses as ligands in asymmetric hydrogenation catalysts

INVENTOR(S): Lemaire, Marc; Saluzzo, Christine; Berthod, Mikael  
PATENT ASSIGNEE(S): Rhodia Chimie, Fr.; Centre National De La Recherche Scientifique Cnrs

SOURCE: Fr. Demande, 45 pp.

CODEN: FRXXBL

DOCUMENT TYPE: Patent

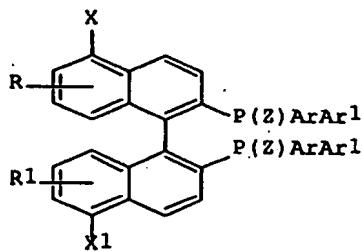
LANGUAGE: French

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

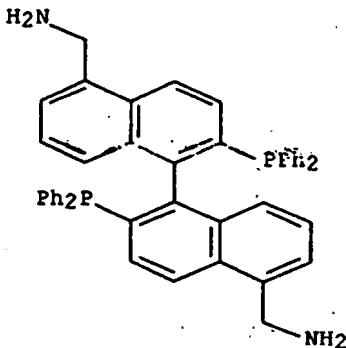
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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FR 2849036	A1	20040625	FR 2002-16086	20021218
FR 2849036	B1	20050520		
CA 2509911	A1	20040708	CA 2003-2509911	20031217
WO 2004056483	A1	20040708	WO 2003-FR3782	20031217
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AU 2003299336	A1	20040714	AU 2003-299336	20031217
CN 1738679	A	20060222	CN 2003-80109027	20031217
EP 1633477	A1	20060315	EP 2003-799617	20031217
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US 2007010695	A1	20070111	US 2006-539640	20060921
PRIORITY APPLN. INFO.:				
FR 2002-16086 A 20021218				
FR 2003-4392 A 20030409				
FR 2003-5255 A 20030429				
WO 2003-FR3782 W 20031217				
OTHER SOURCE(S): GI		CASREACT 141:71716; MARPAT 141:71716		

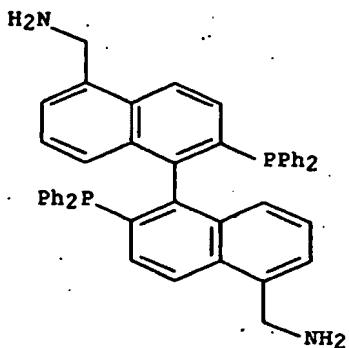


AB Racemic and optically active diphosphines I [Z = lone pair; R, R1 = H, C1-6 alkyl, C1-6 alkoxy; Ar, Ar1 = alkyl, alkenyl, cycloalkyl, aryl, aralkyl, preferably Ph; X, X1 = (un)substituted alkyl, alkenyl, alkynyl, cycloalkyl, aryl, aralkyl, Br, Cl, iodo, OH, CN, CH2NH2, CO2H or esters, CH2OH, NHNH2, N3, Mg, Li, etc.] and bis(phosphine oxide)s I [Z = O; same R, R1, Ar, Ar1; X, X1 = Cl, Br, iodo] useful, in their optically active form, as ligands for ruthenium, rhodium or iridium catalysts in asym. organic synthesis and in particular for enantioselective hydrogenation of C:C or C:O double bonds, are claimed, as are processes for preparation of I. In an example, treating 0.0235 mmol (S)- or (R)-I (Z = lone pair; R = R1 = H; Ar = Ar1 = Ph; X = X1 = CH2NH2; preparation given) in 1 mL CH2Cl2 with 0.0235 mmol bis(2-methylallyl)(1,5-cyclooctadiene)ruthenium for 30 min, followed by evaporation of solvent and addition of MeOH or EtOH solvent and Me or Et acetoacetate substrate with a substrate-to-catalyst ratio of 1000:1 and hydrogenation at 40 bar H2 at 50° for 15 h gave 100% conversions to the corresponding alc. with >99% ee, where the configuration of the alc. product depended on the chirality of I used.

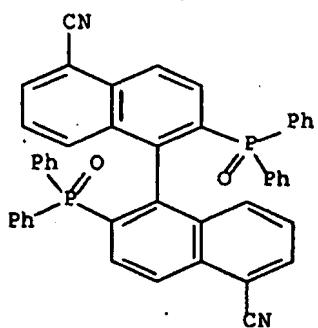
IT 681244-51-9P 709640-82-4P  
 RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);  
 USES (Uses)  
 (preparation of chiral binaphthyl diphosphines, and their uses as ligands  
 in  
 asym. hydrogenation catalysts)  
 RN 681244-51-9 HCPLUS  
 CN [1,1'-Binaphthalene]-5,5'-dimethanamine, 2,2'-bis(diphenylphosphino)-,  
 (1R)- (9CI) (CA INDEX NAME)



RN 709640-82-4 HCPLUS  
 CN [1,1'-Binaphthalene]-5,5'-dimethanamine, 2,2'-bis(diphenylphosphino)-,  
 (1S)- (9CI) (CA INDEX NAME)

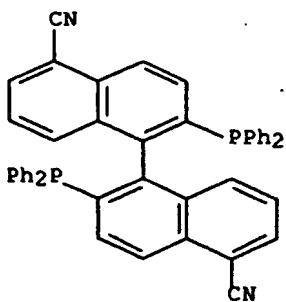


IT 681244-41-7P 681244-45-1P 709640-80-2P  
 709640-81-3P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation of chiral binaphthyl diphosphines, and their uses as ligands  
 in  
 asym. hydrogenation catalysts)  
 RN 681244-41-7 HCPLUS  
 CN [1,1'-Binaphthalene]-5,5'-dicarbonitrile, 2,2'-bis(diphenylphosphinyl)-,  
 (1R)- (9CI) (CA INDEX NAME)



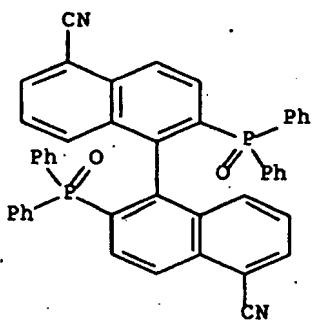
RN 681244-45-1 HCAPLUS

CN [1,1'-Binaphthalene]-5,5'-dicarbonitrile, 2,2'-bis(diphenylphosphino)-, (1R)- (9CI) (CA INDEX NAME)



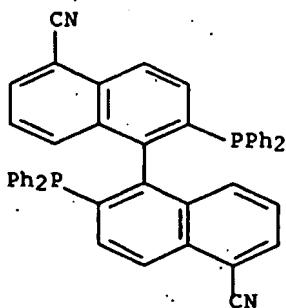
RN 709640-80-2 HCAPLUS

CN [1,1'-Binaphthalene]-5,5'-dicarbonitrile, 2,2'-bis(diphenylphosphinyl)-, (1S)- (9CI) (CA INDEX NAME)



RN 709640-81-3 HCAPLUS

CN [1,1'-Binaphthalene]-5,5'-dicarbonitrile, 2,2'-bis(diphenylphosphino)-, (1S)- (9CI) (CA INDEX NAME)

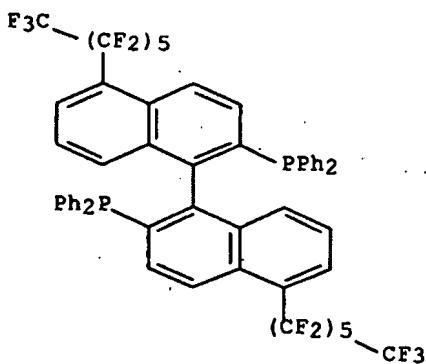


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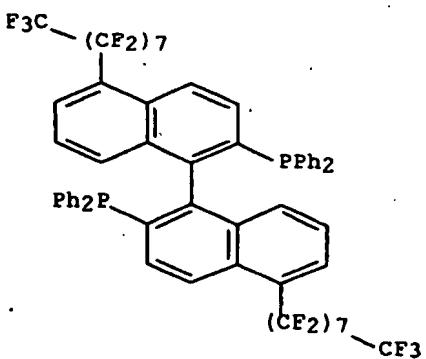
THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 6 OF 7 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2004:270947 HCAPLUS Full-text  
 DOCUMENT NUMBER: 141:38419  
 TITLE: New perfluoroalkylated BINAP usable as a ligand in homogeneous and supercritical carbon dioxide asymmetric hydrogenation  
 Berthod, Mikael; Mignani, Gerard; Lemaire, Marc  
 Laboratoire de Catalyse et de Synthese Organique, UCBL, UMR 5181, Villeurbanne, Fr.  
 Tetrahedron: Asymmetry (2004), 15(7), 1121-1126  
 CODEN: TASYE3; ISSN: 0957-4166  
 Elsevier Science B.V.  
 SOURCE: Journal  
 PUBLISHER:  
 DOCUMENT TYPE:  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 141:38419  
 AB New perfluoroalkylated BINAP ligands were synthesized in four steps from enantiomerically pure BINAP. For example, (+)-(1R)-[5,5'-bis(perfluorohexyl)-1,1'-binaphthalene]-2,2'-diylbis[diphenylphosphine] (I) was prepared starting from (1R)-[1,1'-binaphthalene]-2,2'-diylbis[diphenylphosphine] by bromination and subsequent fluoroalkylation. The [(1,2,5,6-η)-1,5-cyclooctadiene]bis[(1,2,3-η)-2-methyl-2-propenyl]ruthenium-catalyzed hydrogenation of (22)-2-(acetylamino)-2-butenoic acid Me ester in the presence of I as chiral ligand using supercrit. carbon dioxide as solvent and trifluorotoluene as co-solvent gave 2-(acetylamino)butanoic acid Me ester in 74% enantiomeric excess. The new ligands were used in the homogeneous asym. hydrogenation of Et acetoacetate in ethanol and in the asym. hydrogenation of Me 2-acetamidoacrylate in supercrit. carbon dioxide. In supercrit. media, the addition and nature of a co-solvent have been discussed. Very good conversion and selectivity were obtained in each case.  
 IT 701935-24-2P 701935-25-3P  
 RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);  
 USES (Uses)  
 (preparation of chiral  
 [bis(perfluorohexyl)binaphthalene]diylbis[diphenylphosphine] as ligands for ruthenium-catalyzed stereoselective hydrogenation)  
 RN 701935-24-2 HCAPLUS  
 CN Phosphine, [(1R)-5,5'-bis(tridecafluorohexyl)[1,1'-binaphthalene]-2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)



RN 701935-25-3 HCPLUS

CN Phosphine, [(1R)-5,5'-bis(heptadecafluoroctyl)[1,1'-binaphthalene]-2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)



IT 701935-19-5P 701935-21-9P

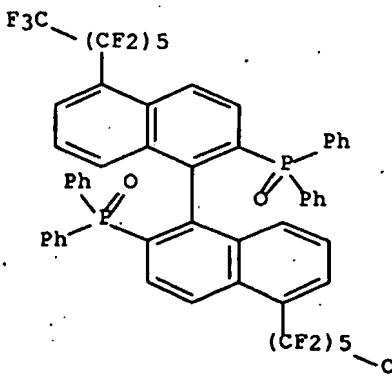
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation of chiral

[bis(perfluorohexyl)binaphthalene]diylbis[diphenylphosphine] as ligands for ruthenium-catalyzed stereoselective hydrogenation

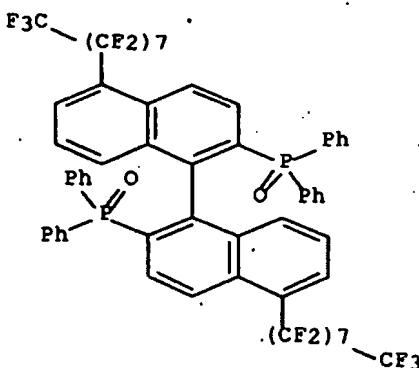
RN 701935-19-5 HCPLUS

CN Phosphine oxide, [(1R)-5,5'-bis(tridecafluorohexyl)[1,1'-binaphthalene]-2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)



RN 701935-21-9 HCAPLUS

CN Phosphine oxide, [(1R)-5,5'-bis(heptadecafluoroctyl)[1,1'-binaphthalene]-2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 7 OF 7 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:106245 HCAPLUS Full-text

DOCUMENT NUMBER: 140:357425

TITLE: 4,4' and 5,5'-DiAMBINAP as a hydrosoluble chiral ligand: syntheses and use in Ru(II) asymmetric biphasic catalytic hydrogenation

AUTHOR(S): Berthod, Mikael; Saluzzo, Christine; Mignani, Gerard; Lemaire, Marc

CORPORATE SOURCE: Laboratoire de Catalyse et de Synthese Organique, UCBL, UMR 5181, Villeurbanne, 69622, Fr.

SOURCE: Tetrahedron: Asymmetry (2004), 15(4), 639-645

CODEN: TASYE3; ISSN: 0957-4166

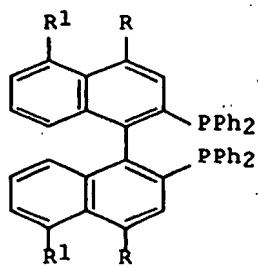
PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

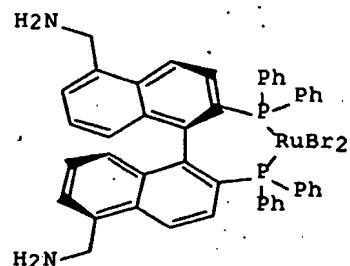
LANGUAGE: English

OTHER SOURCE(S): CASREACT 140:357425

GI



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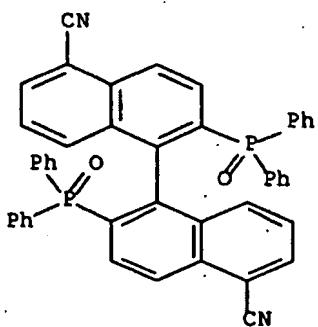


II

AB 4,4' And 5,5'-di(aminomethyl)BINAP (S)-I (R = H2NCH2; R1 = H) and (R)-I (R = H; R1 = H2NCH2) are prepared in five steps from enantiomerically pure BINAP; derived ruthenium (II) catalysts such as II•2HBr are found to be water-soluble and enantioselective catalysts for the hydrogenation of  $\beta$ -keto esters in biphasic water-substrate solns. to give nonracemic  $\beta$ -hydroxy esters in 100% conversion and 96-99% ee. Oxidation of BINAP enantiomers with hydrogen peroxide yields the bis(phosphine oxide) of BINAP. Regioselective bromination of BINAP P,P'-dioxide with bromine and pyridine in methylene chloride yields the 4,4'-dibromide in 76% yield; bromination of BINAP P,P'-dioxide with bromine and iron in 1,2-dichloroethane at 80° yields the 5,5'-dibromide in 81% yield. Coupling of the dibromides with copper (I) cyanide in DMF yields the dinitriles; using the reagent combination of phenylsilane and trichlorosilane, the phosphine oxides are reduced to the phosphines in quant. yield. Reduction of the nitriles with lithium aluminum hydride yields the products I. Treatment of I with aqueous hydrobromic acid followed by addition of the ruthenium complex Ru( $\mu$ 4-1,5-COD)( $\mu$ 3-CH2CMe:CH2)2 and hydrobromic acid in acetone yields water-soluble ruthenium catalysts such as II in quant. yield. Hydrogenation of Me and Et acetoacetate and Me benzoylacetate with catalysts such as II in methanol, ethanol, or water (in which the substrate forms a second phase) at 40 bar hydrogen pressure and 50° for 15 h yields the corresponding  $\beta$ -hydroxy esters in 100% conversion and 96-99% ee.

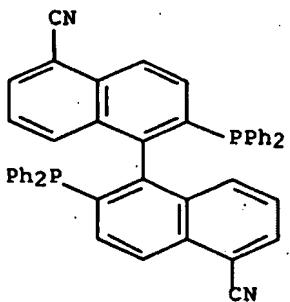
IT 681244-41-7P 681244-45-1P 681244-51-9P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation of nonracemic di(aminomethyl)BINAP ligands using regioselective bromination and chemoselective phosphine oxide reduction as key steps and the use of the ligands in enantioselective hydrogenation of  $\beta$ -keto esters)

RN 681244-41-7 HCPLUS  
 CN [1,1'-Binaphthalene]-5,5'-dicarbonitrile, 2,2'-bis(diphenylphosphinyl)-, (1R)- (9CI) (CA INDEX NAME)



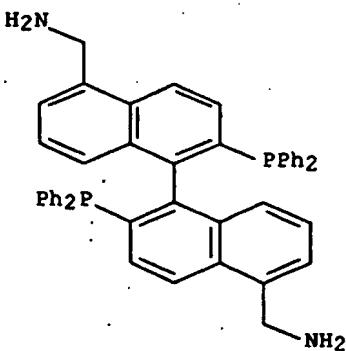
RN 681244-45-1 HCAPLUS

CN [1,1'-Binaphthalene]-5,5'-dicarbonitrile, 2,2'-bis(diphenylphosphino)-, (1R)- (9CI) (CA INDEX NAME)



RN 681244-51-9 HCAPLUS

CN [1,1'-Binaphthalene]-5,5'-dimethanamine, 2,2'-bis(diphenylphosphino)-, (1R)- (9CI) (CA INDEX NAME)

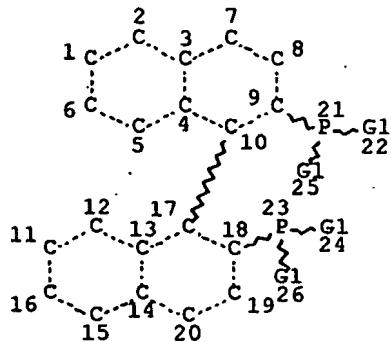


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THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

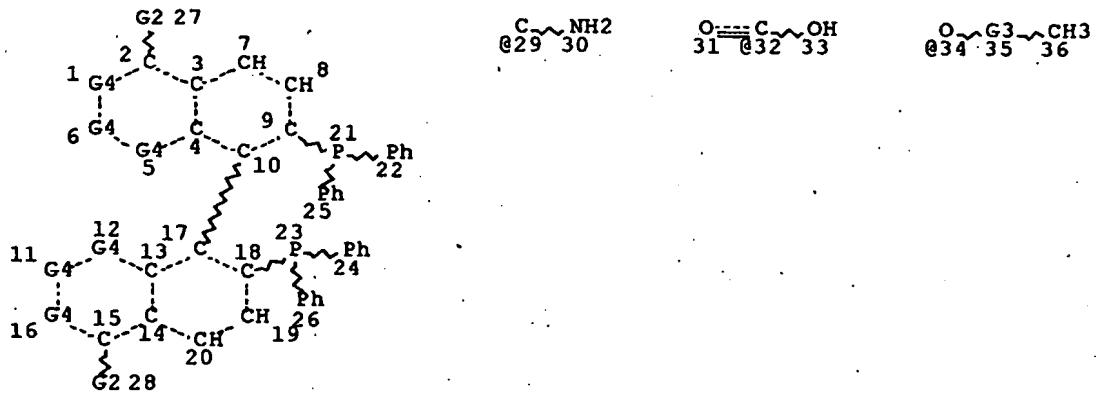
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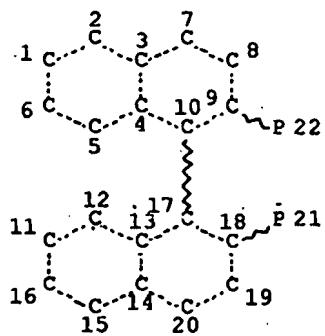


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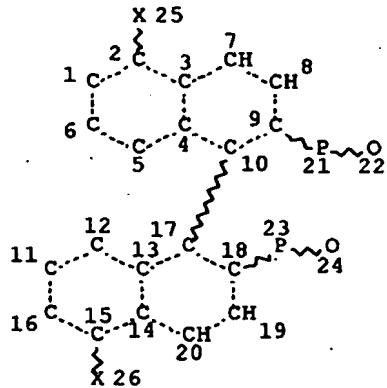
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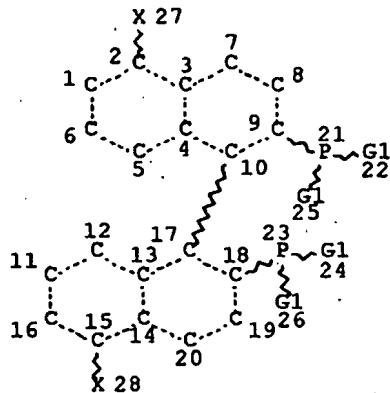
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 L23 STR



NODE ATTRIBUTES:  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 26

STEREO ATTRIBUTES: NONE

L24 3 SEA FILE=REGISTRY SUB=L21 SSS FUL L23  
L26 STR

VAR G1=AK/CY

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

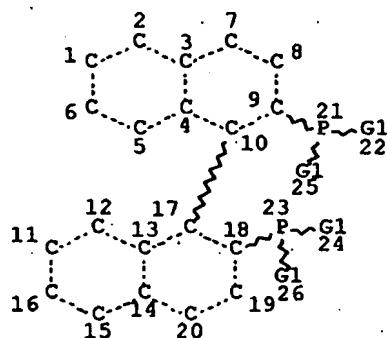
NUMBER OF NODES IS 28

STEREO ATTRIBUTES: NONE

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L33 0 SEA FILE=HCAPLUS ABB=ON PLU=ON (L30 OR L31) NOT L17

=&gt;=&gt; d stat que 142

L2 STR



VAR G1=AK/CY

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

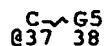
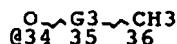
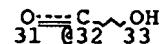
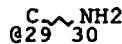
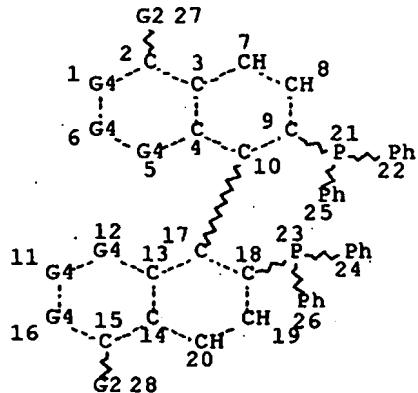
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## GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 26

## STEREO ATTRIBUTES: NONE

L4 563 SEA FILE=REGISTRY SSS FUL L2  
L14 STR



VAR G2=AK/CN/29/32

REP G3=(0-3) C

VAR G4=CH/37

VAR G5=AK/34

## NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

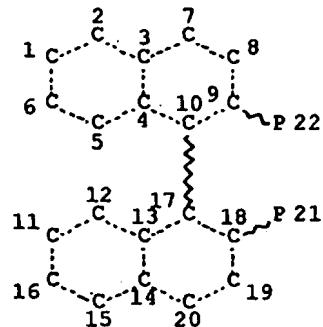
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RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 38

## STEREO ATTRIBUTES: NONE

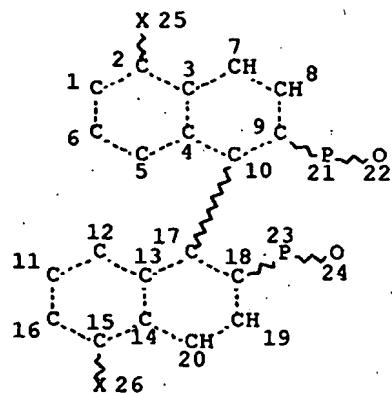
L16 18 SEA FILE=REGISTRY SUB=L4 SSS FUL L14  
L17 7 SEA FILE=HCAPLUS ABB=ON PLU=ON L16  
L19 STR



NODE ATTRIBUTES:  
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 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RSPEC I  
 NUMBER OF NODES IS 22

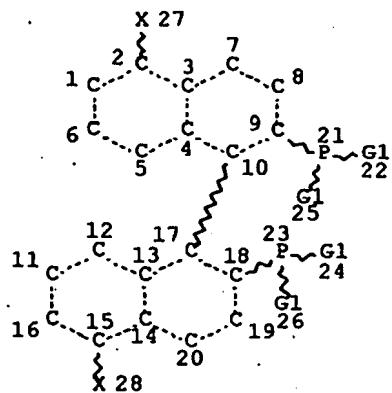
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 L23 STR



NODE ATTRIBUTES:  
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 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 26

STEREO ATTRIBUTES: NONE  
 L24 3 SEA FILE=REGISTRY SUB=L21 SSS FUL L23  
 L25 550 SEA FILE=REGISTRY ABB=ON PLU=ON L21 NOT L24  
 L26 STR



VAR G1=AK/CY

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 28

STEREO ATTRIBUTES: NONE

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L28	540 SEA FILE=REGISTRY ABB=ON PLU=ON L4 NOT (L16 OR L27)
L29	1674 SEA FILE=HCAPLUS ABB=ON PLU=ON L25.
L30	6 SEA FILE=HCAPLUS ABB=ON PLU=ON L24
L31	6 SEA FILE=HCAPLUS ABB=ON PLU=ON L27
L33	0 SEA FILE=HCAPLUS ABB=ON PLU=ON (L30 OR L31) NOT L17
L34	215 SEA FILE=HCAPLUS ABB=ON PLU=ON L28/P
L35	211 SEA FILE=HCAPLUS ABB=ON PLU=ON L29 AND L34
L36	116181 SEA FILE=HCAPLUS ABB=ON PLU=ON (HALOGENATION/CV OR "HALOGENAT" ION (L) AGENTS"/CV OR "HALOGENATING AGENTS"/CV OR "OXIDATIVE HALOGENATION"/CV OR BROMINATION/CV OR CHLORINATION/CV OR FLUORINATION/CV OR IODINATION/CV OR "HALOGENATION CATALYSTS"/CV OR "HALOGENATION KINETICS"/CV OR HALOGENS/CV) OR ?HALOGENAT?
L37	1280589 SEA FILE=HCAPLUS ABB=ON PLU=ON ("REDOX REACTION"/CV OR REDUCTION/CV) OR ?REDUCT?
L40	5 SEA FILE=HCAPLUS ABB=ON PLU=ON L29 AND L36 AND L37
L41	4 SEA FILE=HCAPLUS ABB=ON PLU=ON L40 NOT (L17 OR L33)
L42	2 SEA FILE=HCAPLUS ABB=ON PLU=ON L41 AND L35

=&gt; d ibib abs hitstr 142 1-2

L42 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1998:304138 HCAPLUS Full-text

DOCUMENT NUMBER: 129:16234

TITLE: Preparation of optically active binaphthyl and octahydrobinaphthyl bis(phosphine) ligands

INVENTOR(S): Zhang, Xiaoyaong; Sayo, Noboru

PATENT ASSIGNEE(S): Takasago International Corp., Japan

SOURCE: Eur. Pat. Appl., 17 pp.

CODEN: EPXXDW

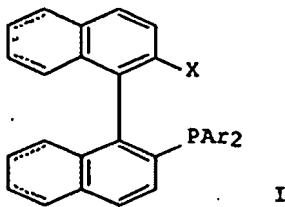
DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 839819	A1	19980506	EP 1997-402528	19971024
EP 839819	B1	20030917		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 10120692	A	19980512	JP 1996-282157	19961024
JP 3445451	B2	20030908		
US 5922918	A	19990713	US 1997-957020	19971024
PRIORITY APPLN. INFO.:			JP 1996-282157	A 19961024
OTHER SOURCE(S):	CASREACT 129:16234; MARPAT 129:16234			
GI				

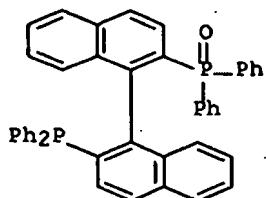


AB Compound I (X = PAr<sub>2</sub>), ligand of a catalyst complex useful for asym. syntheses, was prepared in an economical way by reacting compound I (X = OTf) with phosphine oxides Ar<sub>2</sub>P(O)H in the presence of a transition metal/phosphine complex. In I, the double line consisting of a continuous line and a dotted line signifies either a double bond or a single bond, resp. forming part of a naphthalene ring or an octahydonaphthalene ring depending on whether the naphthalene ring was subjected to the reduction or not; Tf represents a trifluoromethanesulfonyl group; and Ar represents a Ph group, a substituted Ph group (bearing 1 to 3 substituents which may be the same or different and are selected from the group consisting of halogen atoms, lower alkyl group, lower alkoxy group and halogenated lower alkyl group) or a naphthyl group which may bear a lower alkyl or lower alkoxy substituent. For example, (S)-2,2'-bis(trifluoromethanesulfonyloxy)-1,1'-binaphthyl was reacted with bis(2-naphthyl)phosphine oxide in the presence of Pd(OAc)<sub>2</sub>, Ph<sub>2</sub>P(CH<sub>2</sub>)<sub>3</sub>PPh<sub>2</sub>, NaO<sub>2</sub>CH and iPr<sub>2</sub>EtN in DMSO to give 75% (S)-2-bis(2-naphthyl)phosphinyl-2'-(trifluoromethanesulfonyloxy)-1,1'-binaphthyl (1). 1 Was reduced to the phosphino analog (2) using Cl<sub>3</sub>SiH and dimethylaniline in toluene in 84% yield. 2 Was substituted with bis(2-naphthyl)phosphine oxide in DMF in the presence of Ni(dppe)Cl<sub>2</sub> and DABCO to give 56% (S)-2-bis(2-naphthyl)phosphino-2'-bis(2-naphthyl)phosphinyl-1,1'-binaphthyl (3). 3 Was reduced similarly to 1 to give (S)-2,2'-bis(bis(2-naphthyl)phosphino)-1,1'-binaphthyl in 87% yield.

IT 152646-80-5P, (R)-2-Diphenylphosphino-2'-diphenylphosphinyl-1,1'-binaphthyl 190896-71-0P, (S)-2-(Bis(2-naphthyl)phosphino)-2'-(bis(2-naphthyl)phosphinyl)-1,1'-binaphthyl  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (intermediate for preparation of optically active bis(phosphine))

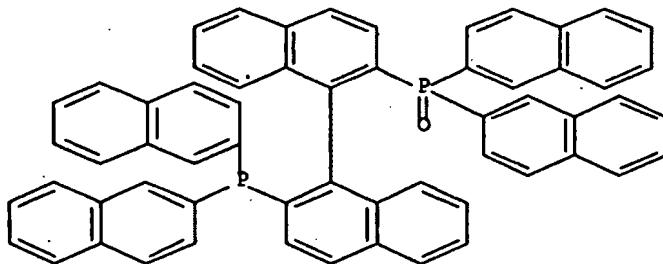
RN 152646-80-5 HCPLUS

CN Phosphine oxide, [(1R)-2'-(diphenylphosphino)[1,1'-binaphthalen]-2-yl]diphenyl- (9CI) (CA INDEX NAME)



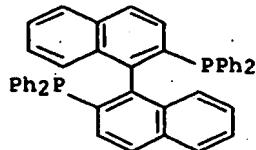
RN 190896-71-0 HCAPLUS

CN Phosphine oxide, [(1S)-2'-(di-2-naphthalenylphosphino)[1,1'-binaphthalen]-2-yl]di-2-naphthalenyl- (9CI) (CA INDEX NAME)

IT 76189-55-4P, (R)-2,2'-Bis(diphenylphosphino)-1,1'-binaphthyl  
190896-72-1P, (S)-2,2'-Bis(bis(2-naphthyl)phosphino)-1,1'-binaphthylRL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

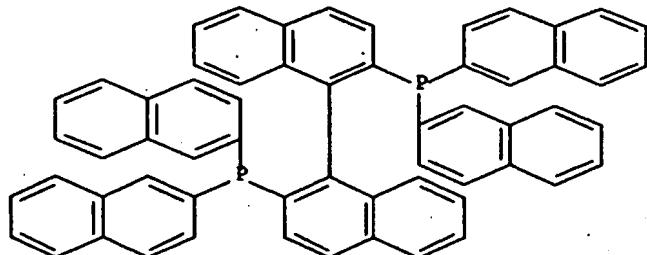
RN 76189-55-4 HCAPLUS

CN Phosphine, 1,1'-[{(1R)-[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl- (CA INDEX NAME)]}



RN 190896-72-1 HCAPLUS

CN Phosphine, (1S)-[1,1'-binaphthalene]-2,2'-diylbis[di-2-naphthalenyl- (9CI) (CA INDEX NAME)]



REFERENCE COUNT:

5

THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

ACCESSION NUMBER: 1997:433402 HCPLUS Full-text  
 DOCUMENT NUMBER: 127:50792  
 TITLE: Method for producing optically active diphosphines for  
 use as ligands of ruthenium and rhodium asym.  
 hydrogenation catalysts  
 INVENTOR(S): Sayo, Noboru; Zhang, Xiaoyong; Oh, Tatsuya; Yoshida,  
 Akifumi; Yokozawa, Tohru  
 PATENT ASSIGNEE(S): Takasago International Corporation, Japan  
 SOURCE: Eur. Pat. Appl., 19. pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 771812	A1	19970507	EP 1996-402306	19961030
EP 771812	B1	20031210		
R: CH, DE, FR, GB, IT, LI, NL				
JP 09124669	A	19970513	JP 1995-305211	19951031
JP 3770639	B2	20060426		
US 5693868	A	19971202	US 1996-740506	19961030
JP 2005343903	A	20051215	JP 2005-215523	20050726
JP 1995-305211 A 19951031				

PRIORITY APPLN. INFO.: CASREACT 127:50792

OTHER SOURCE(S): CASREACT 127:50792

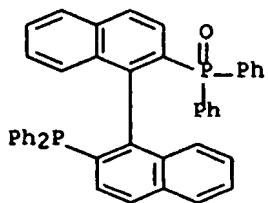
AB The present invention provides a method for producing novel optically active diphosphine compds. [e.g., 2,2'-bis(di-substituted phosphino)-1,1'-binaphthyl compds.] that have selectivity such as chemoselectivity or enantioselectivity and catalytic activity different from those possessed by conventional BINAP compds. In a method of the present invention for producing an optically active diphosphine compound, i. e. 2,2-bis(di-substituted phosphino)-1,1'-binaphthyl, 2,2'- bis(trifluoromethanesulfonyloxy)-1,1'-binaphthyl (1) is reacted, in the presence of a transition metal-phosphine complex, with a phosphine oxide compound expressed by the following general formula, A2P(O)H wherein A indicates a Ph group; a mono- to trisubstituted Ph group, wherein each substituent in the substituted Ph group is individually selected from halogen atoms, lower alkyl groups, lower alkoxy groups or lower halogenated-alkoxy groups such that one or more of the substituents may be the same or different; a naphthyl group; a lower-alkyl naphthyl group; or a lower-alkoxy naphthyl group. E.g., (S)-1 reacts with NiCl<sub>2</sub>(dppe) and N-methylpiperidine, in DMF solvent at room temperature for 15 mins. and 100° for another 15 mins. followed by addition of di(2-naphthyl)phosphine oxide to give (S)-2-di(2-naphthyl)phosphinyl-2'- di(2-naphthyl)phosphino-1,1'-binaphthyl (2) in 40% yield. 2 Is reduced by Cl<sub>3</sub>SiH/dimethylaniline/toluene to give (S)-2,2'-bis[di(2-naphthyl)phosphino]-1,1'-binaphthyl (3) in 87% yield. 3 Reacts with [Ru(p-cymene)I<sub>2</sub>]<sub>2</sub> to give [RuI(p-cymene)(3)]I which catalyzes the asym. reduction of Me 2-benzamidemethyl-3-oxobutyrate to give syn and anti-alcs. in 87:13 ratio.

IT 152646-80-5P 190896-71-OP 190896-85-6P  
 190896-86-7P 190896-87-8P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and reduction in the presence of trichlorosilane to give optically active diphosphine)

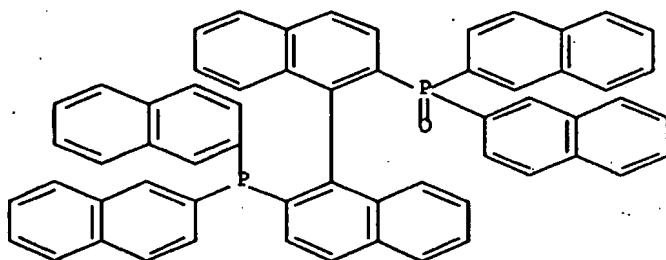
RN 152646-80-5 HCPLUS

CN Phosphine oxide, [(1R)-2'-(diphenylphosphino)[1,1'-binaphthalen]-2-yl]diphenyl- (9CI) (CA INDEX NAME)



RN 190896-71-0 HCPLUS

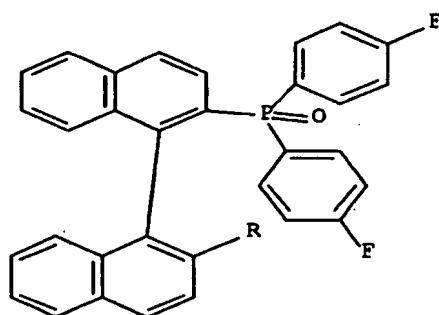
CN Phosphine oxide, [(1S)-2'-(di-2-naphthalenylphosphino)[1,1'-binaphthalen]-2-yl]di-2-naphthalenyl- (9CI) (CA INDEX NAME)

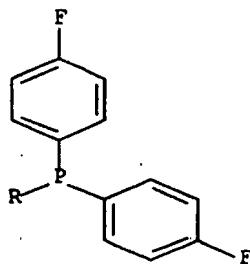


RN 190896-85-6 HCPLUS

CN Phosphine oxide, [2'-(bis(4-fluorophenyl)phosphino)[1,1'-binaphthalen]-2-yl]bis(4-fluorophenyl)-, (+)- (9CI) (CA INDEX NAME)

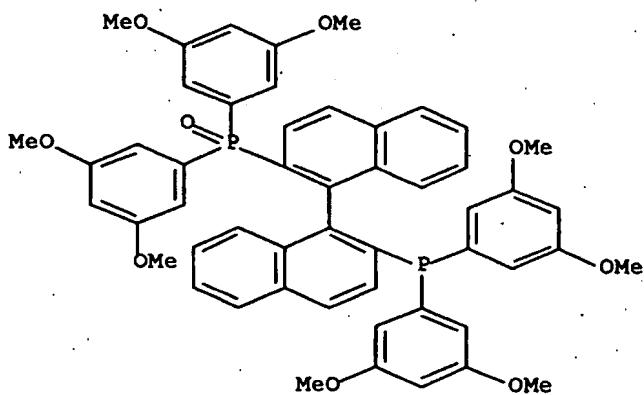
PAGE 1-A





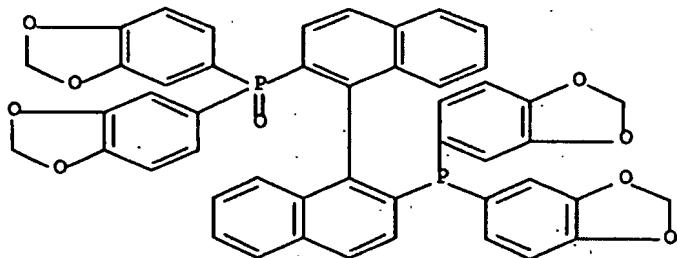
RN 190896-86-7 HCPLUS

CN Phosphine oxide, [2'-[bis(3,5-dimethoxyphenyl)phosphino][1,1'-binaphthalen]-2-yl]bis(3,5-dimethoxyphenyl)-, (+)- (9CI) (CA INDEX NAME)



RN 190896-87-8 HCPLUS

CN Phosphine oxide, bis(1,3-benzodioxol-5-yl)[2'-[bis(1,3-benzodioxol-5-yl)phosphino][1,1'-binaphthalen]-2-yl]-, (-)- (9CI) (CA INDEX NAME)



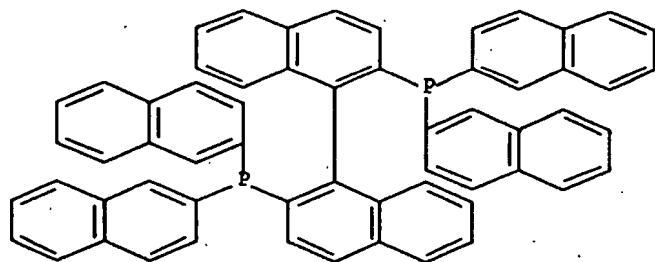
IT 190896-72-1P 190896-91-4P 190896-92-5P

191031-48-8P

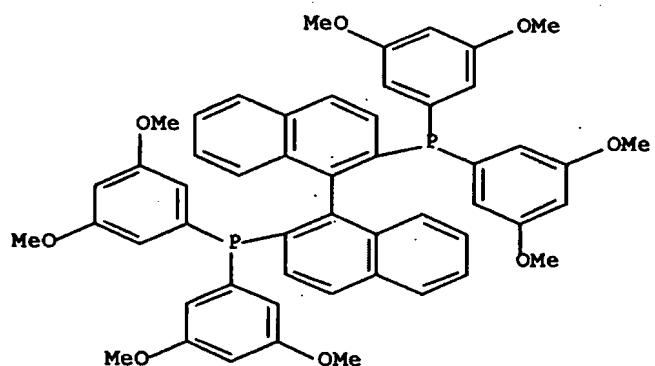
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and substitution reactions with ruthenium and rhodium)

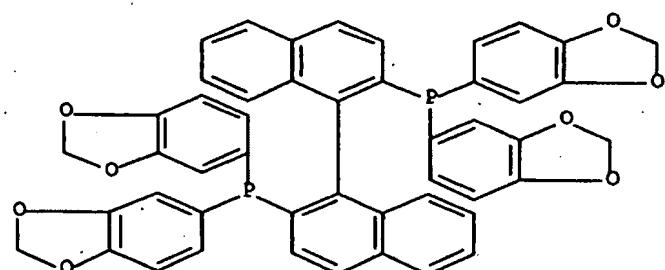
complexes)  
 RN 190896-72-1 HCPLUS  
 CN Phosphine, (1S)-[1,1'-binaphthalene]-2,2'-diylbis[di-2-naphthalenyl- (9CI)  
 (CA INDEX NAME)



RN 190896-91-4 HCPLUS  
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 stereoisomer (9CI) (CA INDEX NAME)

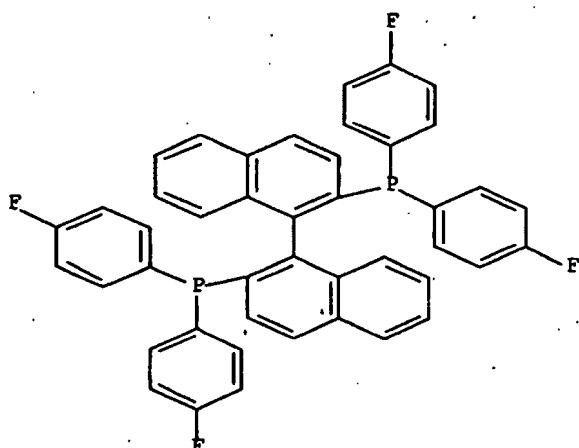


RN 190896-92-5 HCPLUS  
 CN Phosphine, [1,1'-binaphthalene]-2,2'-diylbis[bis(1,3-benzodioxol-5-yl)-,  
 stereoisomer (9CI) (CA INDEX NAME)



RN 191031-48-8 HCPLUS

CN Phosphine, [1,1'-binaphthalene]-2,2'-diylbis[bis(4-fluorophenyl)-, (R)- (9CI) (CA INDEX NAME)

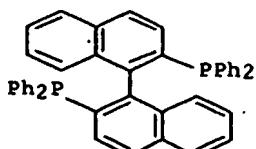


IT 76189-55-4P 190896-75-4P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

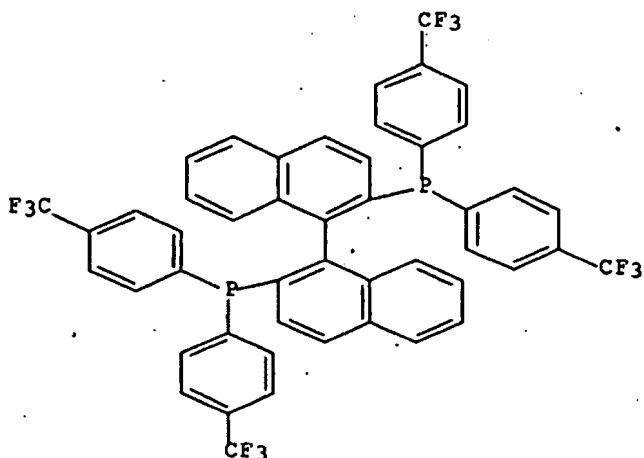
RN 76189-55-4 HCPLUS

CN Phosphine, 1,1'-(1R)-[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl- (CA INDEX NAME)

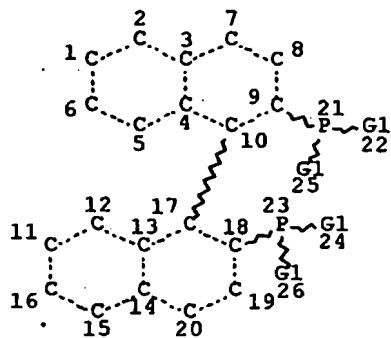


RN 190896-75-4 HCPLUS

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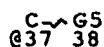
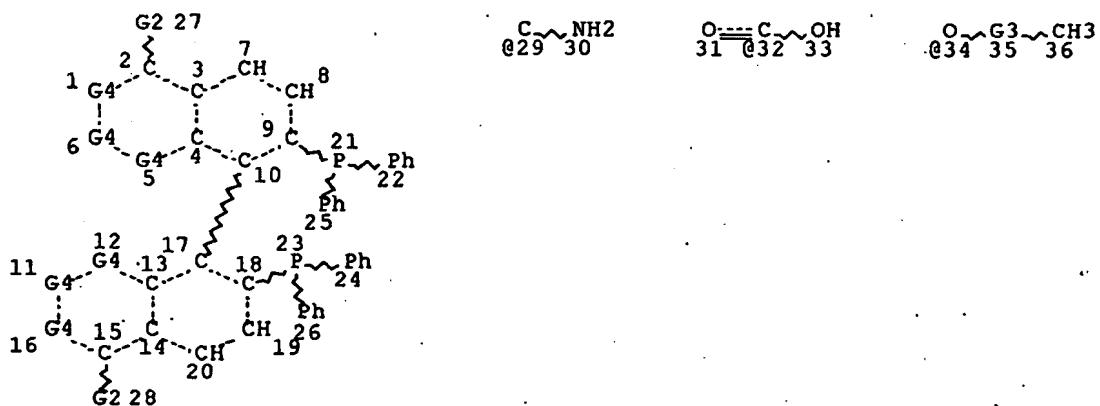
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L2 STR



VAR G1=AK/CY  
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DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 26

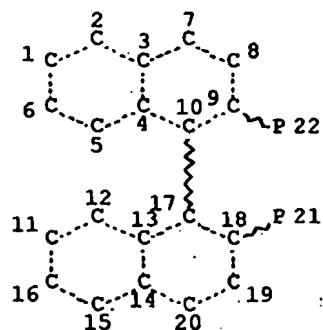
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L14 STR



VAR G2=AK/CN/29/32  
REP G3=(0-3).C  
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NODE ATTRIBUTES:  
DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 38

STEREO ATTRIBUTES: NONE  
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L17 7 SEA FILE=HCAPLUS ABB=ON PLU=ON L16  
L19 STR

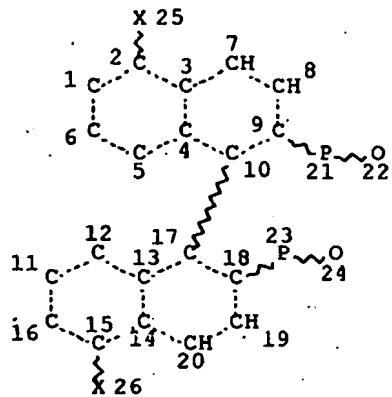


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DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RSPEC I

NUMBER OF NODES IS 22

STEREO ATTRIBUTES: NONE

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NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

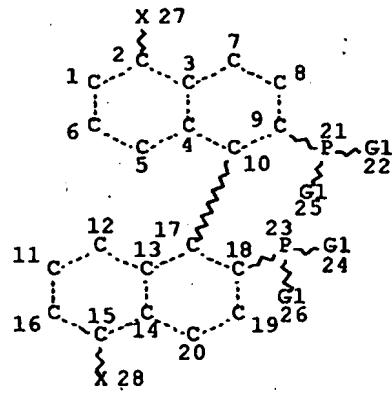
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NUMBER OF NODES IS 26

STEREO ATTRIBUTES: NONE

L24 3 SEA FILE=REGISTRY SUB=L21 SSS FUL L23

L25 550 SEA FILE=REGISTRY ABB=ON PLU=ON L21 NOT L24  
L26 STR

VAR G1=AK/CY

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 28

STEREO ATTRIBUTES: NONE

L27 5 SEA FILE=REGISTRY SUB=L4 SSS FUL L26  
 L28 540 SEA FILE=REGISTRY ABB=ON PLU=ON L4 NOT (L16 OR L27)  
 L29 1674 SEA FILE=HCAPLUS ABB=ON PLU=ON L25  
 L30 6 SEA FILE=HCAPLUS ABB=ON PLU=ON L24  
 L31 6 SEA FILE=HCAPLUS ABB=ON PLU=ON L27  
 L32 1680 SEA FILE=HCAPLUS ABB=ON PLU=ON L28  
 L33 0 SEA FILE=HCAPLUS ABB=ON PLU=ON (L30 OR L31) NOT L17  
 L34 215 SEA FILE=HCAPLUS ABB=ON PLU=ON L28/P  
 L35 211 SEA FILE=HCAPLUS ABB=ON PLU=ON L29 AND L34  
 L36 116181 SEA FILE=HCAPLUS ABB=ON PLU=ON (HALOGENATION/CV OR "HALOGENATION (L) AGENTS"/CV OR "HALOGENATING AGENTS"/CV OR "OXIDATIVE HALOGENATION"/CV OR BROMINATION/CV OR CHLORINATION/CV OR FLUORINATION/CV OR IODINATION/CV OR "HALOGENATION CATALYSTS"/CV OR "HALOGENATION KINETICS"/CV OR HALOGENS/CV) OR ?HALOGENAT?  
 L37 1280589 SEA FILE=HCAPLUS ABB=ON PLU=ON ("REDOX REACTION"/CV OR REDUCTION/CV) OR ?REDUCT?  
 L40 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L29 AND L36 AND L37  
 L41 4 SEA FILE=HCAPLUS ABB=ON PLU=ON L40 NOT (L17 OR L33)  
 L42 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L41 AND L35  
 L43 22 SEA FILE=HCAPLUS ABB=ON PLU=ON L29 AND L36 AND L32  
 L44 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L36 AND L37 AND L32  
 L45 16 SEA FILE=HCAPLUS ABB=ON PLU=ON (L43 OR L44) NOT (L17 OR L33 OR L42)

=> d ibib abs hitstr 145 1-16

L45 ANSWER 1 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2007:351053 HCAPLUS Full-text  
 DOCUMENT NUMBER: 146:393725  
 TITLE: Preparation of diphosphine ligand and transition metal complex using the same for asymmetric synthesis reaction  
 INVENTOR(S): Yamano, Mitsuhsisa; Goto, Mitsutaka; Kawaguchi, Shinji; Yamada, Masatoshi; Kawakami, Jun-Ichi  
 PATENT ASSIGNEE(S): Takeda Pharmaceutical Company Limited, Japan  
 SOURCE: PCT Int. Appl., 96pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2007034975	A1	20070329	WO 2006-JP319095	20060920
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH,				

GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,  
KG, KZ, MD, RU, TJ, TM

PRIORITY APPLN. INFO.:

JP 2005-272599

A 20050920

OTHER SOURCE(S):

MARPAT 146:393725

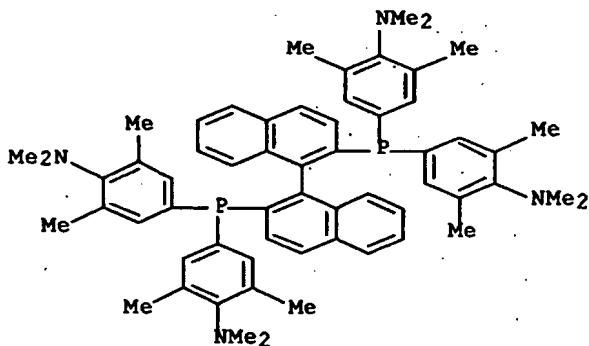
GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

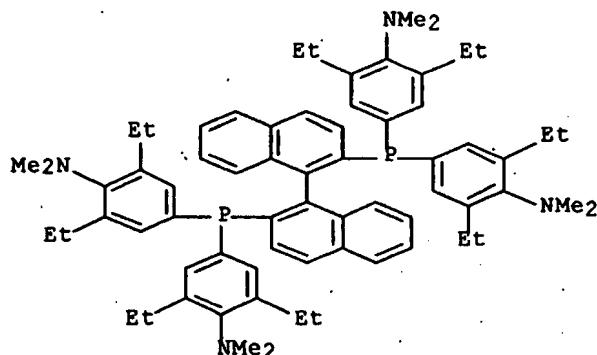
AB Title compds. I [R1 = H, (un)substituted alkyl; R2, R3 = (un)substituted alkyl; or ring B = Q1; ring A = (un)substituted cycle; except 2,2'-bis[bis(4-dimethylaminophenyl)phosphino]-1,1'-binaphthyl] or salts thereof were prepared. For example, reaction of (S)-2,2'-bis(trifluoromethanesulfonyloxy)-1,1'-binaphthyl with bis(4-dimethylamino-3,5-dimethylphenyl)phosphine-borane complex, e.g., prepared from 4-bromo-2,6-dimethylaniline in 3 steps, in the presence of [1,2-bis(diphenylphosphino)ethane]dichloronickel afforded compound II, which was converted into dichloro [(S)-2,2'-bis[bis(4-dimethylamino-3,5-dimethylphenyl)phosphino]-1,1'-binaphthyl]ruthenium(II)-DMF complex (III) by treatment with di- $\mu$ -chlorobis([ $\eta$ 6-benzene]chlororuthenium(II)). Asym. hydrogenation of 1-[3,5-bis(trifluoromethyl)phenyl]ethanone using compound III and (2S)-(+)-1,1'-bis(4-methoxyphenyl)-3-methyl-1,2-butanediamine afforded (R)-1-[3,5-bis(trifluoromethyl)phenyl]ethanol in 96.6% yield and 96.4% ee. Compds. I showed high enantioselectivity and catalytic efficiency in asym. hydrogenation and fluorination.

IT 930781-36-5 930781-37-6 930781-38-7  
RL: CAT (Catalyst use); USES (Uses)  
(preparation of diphosphine-transition metal complex as asym. hydrogenation and fluorination catalyst)

RN 930781-36-5 HCAPLUS  
CN Benzenamine, 4,4',4'',4'''-([1,1'-binaphthalene]-2,2'-diyldiphosphinidyne)tetrakis[2,6-diethyl-N,N-dimethyl- (CA INDEX NAME)

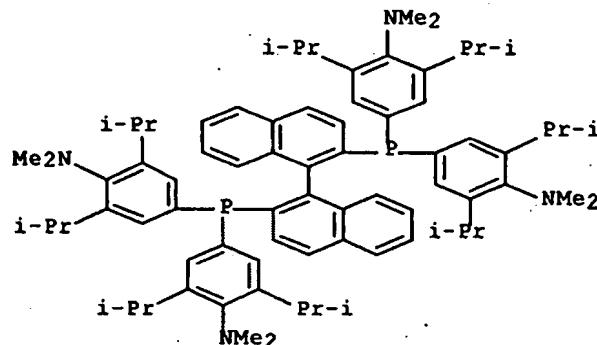


RN 930781-37-6 HCAPLUS  
CN Benzenamine, 4,4',4'',4'''-([1,1'-binaphthalene]-2,2'-diyldiphosphinidyne)tetrakis[2,6-diethyl-N,N-dimethyl- (CA INDEX NAME)



RN 930781-38-7 HCPLUS

CN Benzenamine, 4,4',4'',4'''-([1,1'-binaphthalene]-2,2'-diyl)diposphinidyne)tetraakis[N,N-dimethyl-2,6-bis(1-methylethyl)-(CA INDEX NAME)]



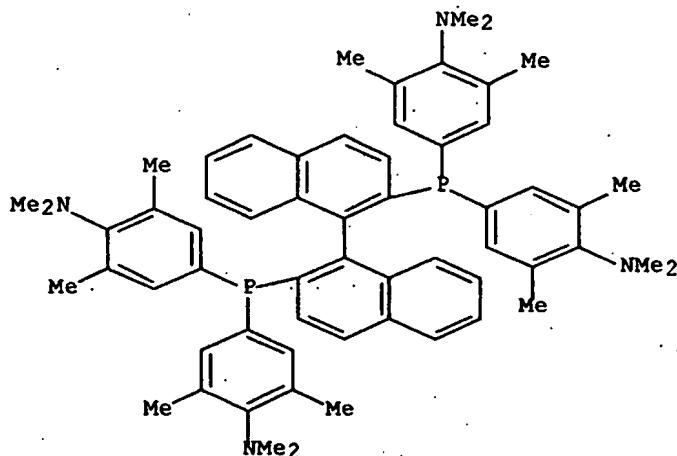
IT 930784-40-0P 930784-41-1P 930784-42-2P

930784-43-3P 930784-44-4P

RL: CAT (Catalyst use); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (preparation of diphosphine-transition metal complex as asym. hydrogenation and fluorination catalyst)

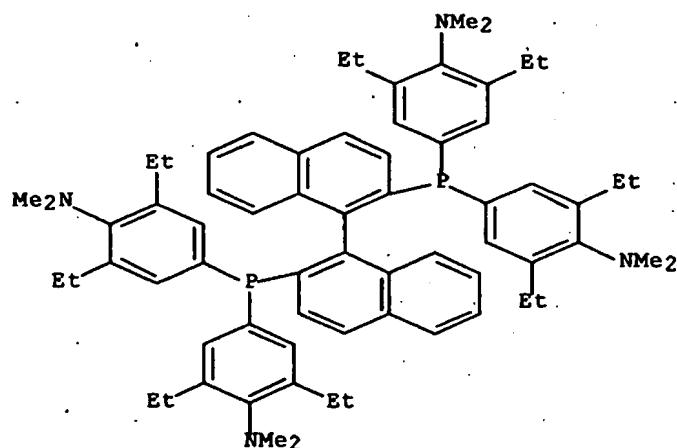
RN 930784-40-0 HCPLUS

CN Benzenamine, 4,4',4'',4'''-[(1S)-[1,1'-binaphthalene]-2,2'-diyl)diposphinidyne]tetraakis[N,N,2,6-tetramethyl-(CA INDEX NAME)]



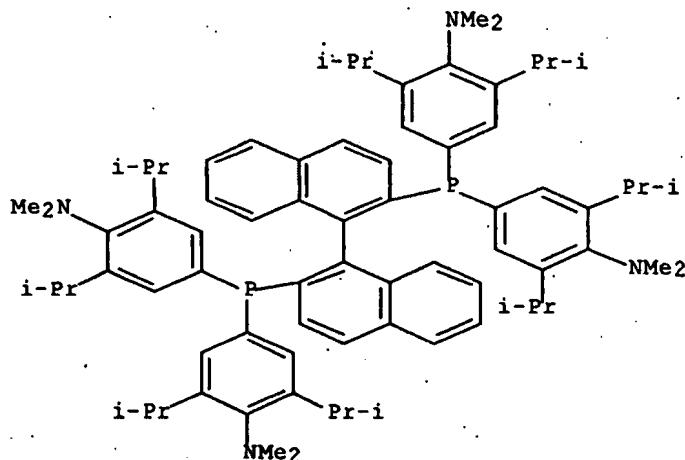
RN 930784-41-1 HCPLUS

CN Benzenamine, 4,4',4'',4'''-[(1S)-[1,1'-binaphthalene]-2,2'-diylidiphosphinidyne]tetrakis[2,6-diethyl-N,N-dimethyl- (CA INDEX NAME)



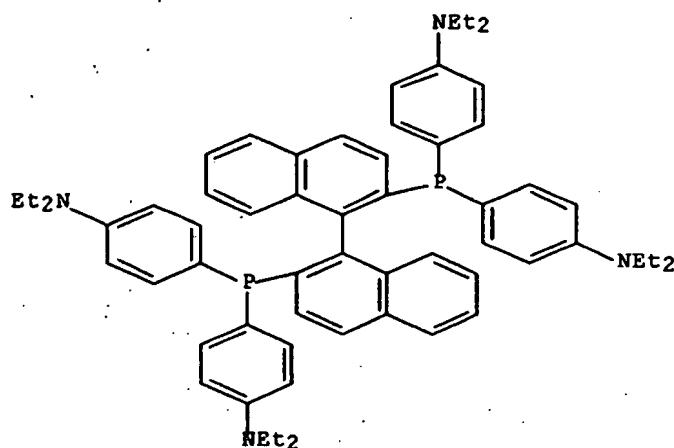
RN 930784-42-2 HCPLUS

CN Benzenamine, 4,4',4'',4'''-[(1S)-[1,1'-binaphthalene]-2,2'-diylidiphosphinidyne]tetrakis[N,N-dimethyl-2,6-bis(1-methylethyl)- (CA INDEX NAME)



RN 930784-43-3 HCPLUS

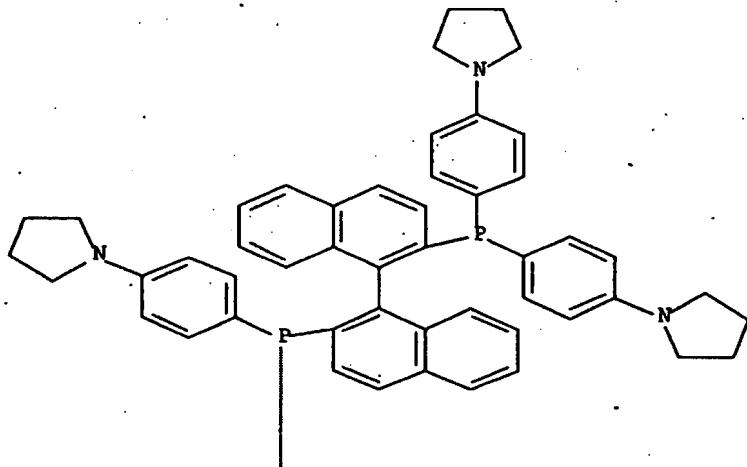
CN Benzenamine, 4,4',4'',4'''-[(1S)-[1,1'-binaphthalene]-2,2'-diyl]diposphinidyne]tetrakis[N,N-diethyl- (CA INDEX NAME)



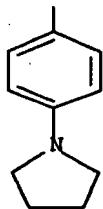
RN 930784-44-4 HCPLUS

CN Pyrrolidine, 1,1',1'',1'''-[(1S)-[1,1'-binaphthalene]-2,2'-diyl]bis(phosphinidynedi-4,1-phenylene)tetra- (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



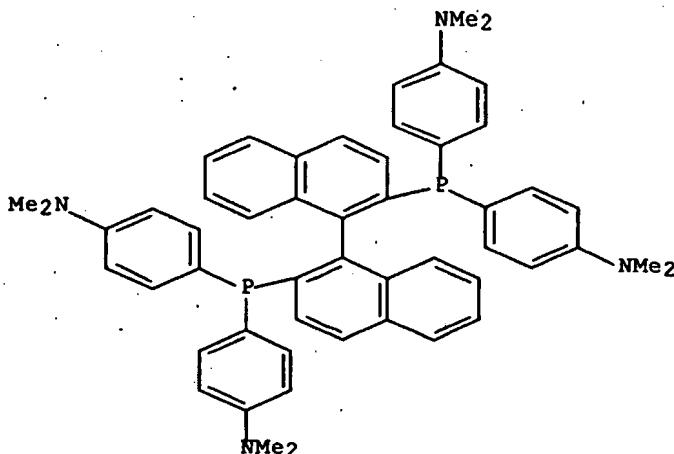
IT 541502-06-1P

RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);  
USES (Uses)

(preparation of diphosphine-transition metal complex as asym. hydrogenation  
and fluorination catalyst)

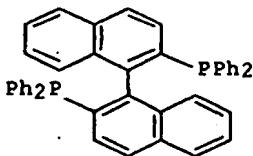
RN 541502-06-1 HCPLUS

CN Benzenamine, 4,4',4'',4'''-[(1S)-[1,1'-binaphthalene]-2,2'-  
diylidiphosphinidyne]tetrakis[N,N-dimethyl- (9CI) (CA INDEX NAME)



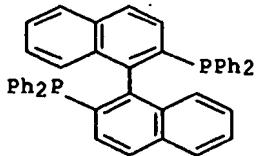
REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 2 OF 16 HCPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2006:1345314 HCPLUS Full-text  
 DOCUMENT NUMBER: 146:337532  
 TITLE: A new entry to *o,o'*-dihalogenated deoxybenzoins by palladium-catalyzed  $\alpha$ -arylation of 2'-chloroacetophenones  
 AUTHOR(S): Carril, Monica; SanMartin, Raul; Dominguez, Esther; Tellitu, Imanol  
 CORPORATE SOURCE: Kimika Organikoa II Saila. Zientzia eta Teknologia Fakultatea, Euskal Herriko Unibertsitatea, Bizkaia, Spain  
 SOURCE: ARKIVOC (Gainesville, FL, United States) (2007), (4), 270-278  
 CODEN: AGFUAR  
 URL: [http://www.arkat-usa.org/ARKIVOC/JOURNAL\\_CONTENT/manuscripts/2007/JB-2024JP&20as&20published&20mainmanu](http://www.arkat-usa.org/ARKIVOC/JOURNAL_CONTENT/manuscripts/2007/JB-2024JP&20as&20published&20mainmanu) script.pdf  
 PUBLISHER: Arkat USA Inc.  
 DOCUMENT TYPE: Journal; (online computer file)  
 LANGUAGE: English  
 AB The palladium-catalyzed arylation reaction is a valid, advantageous tool for the construction of *o,o'*-dihalo-1,2-diarylethanones. After an exhaustive range of assays the arylation of 2'-chloroacetophenones is performed in good yields, thus overcoming the handicap imposed by the presence of the ortho-chloro substituent and controlling the regioselective monoarylation with dibromoarenes.  
 IT 98327-87-8, BINAP  
 RL: CAT (Catalyst use); USES (Uses)  
 (*o,o'*-dihalogenated deoxybenzoins by palladium-catalyzed  $\alpha$ -arylation of 2'-chloroacetophenones)  
 RN 98327-87-8 HCPLUS  
 CN Phosphine, 1,1'-[1,1'-binaphthalene]-2,2'-diylbis[1,1-diphenyl- (CA INDEX NAME)



REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

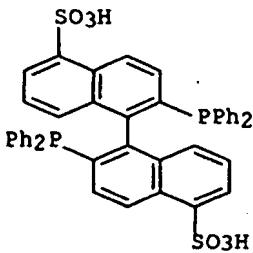
L45 ANSWER 3 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2006:1110697 HCAPLUS Full-text  
 DOCUMENT NUMBER: 146:192826  
 TITLE: Synthesis of N,N,N',N'-tetrasubstituted 1,3-bis(4-aminophenyl)azulenes and their application to a hole-injecting material in organic electroluminescent devices  
 AUTHOR(S): Thanh, Nguyen Chung; Ikai, Masamichi; Kajioka, Takanori; Fujikawa, Hisayoshi; Taga, Yasunori; Zhang, Yanmei; Ogawa, Satoshi; Shimada, Hiroko; Miyahara, Yosuke; Kuroda, Shigeyasu; Oda, Mitsunori  
 CORPORATE SOURCE: Department of Applied Chemistry, Faculty of Engineering, University of Toyama, Toyama, 930-8555, Japan  
 SOURCE: Tetrahedron (2006), 62(48), 11227-11239.  
 CODEN: TETRAB; ISSN: 0040-4020  
 PUBLISHER: Elsevier Ltd.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 146:192826  
 AB After a preliminary search of the reaction conditions for the Suzuki-Miyaura cross-coupling of haloazulenes with arylboronic acids, the title compds. were synthesized either by the direct coupling reaction between 1,3-dihaloazulene and the corresponding N,N-disubstituted 4-aminophenylboronic acids or by a two-step sequence involving the cross-coupling with 4-bromophenylboronic acid and subsequent Pd-catalyzed amination. Application of the title diamines to a hole-injecting material in organic electroluminescent devices was carried out to provide their prominent characteristics as a novel durable, non-cyanine and non-polyamine substance without color fade. The diamine derivs., extended by an ethynyl unit between the azulenyl core and the 4-aminophenyl moiety, were also synthesized and found, unfortunately, unsuitable for vacuum deposition in preparing a multilayer composite.  
 IT 98327-87-8, BINAP  
 RL: CAT (Catalyst use); USES (Uses)  
 (Suzuki catalyst additive; synthesis of N,N,N',N'-tetrasubstituted 1,3-bis(4-aminophenyl)azulenes and their application to a hole-injecting material in organic electroluminescent devices)  
 RN 98327-87-8 HCAPLUS  
 CN Phosphine, 1,1'-(1,1'-binaphthalene)-2,2'-diylbis[1,1-diphenyl- (CA INDEX NAME)



REFERENCE COUNT: 93 THERE ARE 93 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 4 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2005:1020733 HCAPLUS Full-text  
 DOCUMENT NUMBER: 143:306189  
 TITLE: Preparation of pyridinecarboxamides with recyclable catalysts and without the use of halogenation agents  
 INVENTOR(S): Shimazu, Hidetaka; Tamashima, Tomoyuki  
 PATENT ASSIGNEE(S): Koei Chemical Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 18 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005255544	A	20050922	JP 2004-65682	20040309
PRIORITY APPLN. INFO.:			JP 2004-65682	20040309
AB	Pyridinecarboxamides are prepared by isomerization of pyridinealdoximes in multiphase solvent mixts. in the presence of (A) mixts. of hydrophilic phosphines and transition metals, or (B) water-soluble complexes comprising the phosphines and metals. Thus, 4-pyridinealdoxime was refluxed with sulfonated BINAP and RuCl <sub>2</sub> (cod) in 1-butyl-4-methylimidazolium PF <sub>6</sub> salt and C <sub>6</sub> H <sub>6</sub> for 24 h, then the ionic liquid was recovered, which was used in the same reaction 4 more times. Total yield of 4-pyridinecarboxamide was 94.5%.			
IT	864956-92-3P, Disodium 2,2'-bis(diphenylphosphino)-[1,1'-binaphthalene]-5,5'-disulfonate			
RL:	CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)			
	(preparation of pyridinecarboxamides from pyridinealdoximes with recyclable catalysts in multiphase solvent mixts.)			
RN	864956-92-3 HCAPLUS			
CN	[1,1'-Binaphthalene]-5,5'-disulfonic acid, 2,2'-bis(diphenylphosphino)-, disodium salt (9CI) (CA INDEX NAME)			



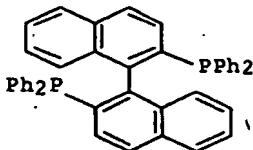
●2 Na

IT 98327-87-8, BINAP

RL: RCT (Reactant); RACT (Reactant or reagent)  
(préparation of pyridinecarboxamides from pyridinealdoximes with recyclable catalysts in multiphase solvent mixts.)

RN 98327-87-8 HCPLUS

CN Phosphine, 1,1'-[1,1'-binaphthalene]-2,2'-diylbis[1,1-diphenyl- (CA INDEX NAME)]



L45 ANSWER 5 OF 16 HCPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:800507 HCPLUS Full-text

DOCUMENT NUMBER: 143:386707

TITLE: A stereoselective synthesis of 1,6-diphenyl-1,3,5-hexatrienes utilizing 4,4,6-trimethyl-2-vinyl-1,3,2-dioxaborinane as a two-carbon alkenyl building block  
Lightfoot, Andrew P.; Twiddle, Steven J. R.; Whiting, Andrew

AUTHOR(S):

CORPORATE SOURCE: GlaxoSmithKline Pharmaceuticals, Harlow, CM19 5AW, UK

SOURCE: Organic &amp; Biomolecular Chemistry (2005), 3(17), 3167-3172

PUBLISHER: Royal Society of Chemistry

DOCUMENT TYPE: Journal

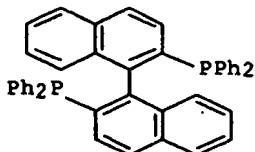
LANGUAGE: English

OTHER SOURCE(S): CASREACT 143:386707

AB A number of 1,6-diphenyl-1,3,5-hexatrienes of varying alkene geometries were stereoselectively prepared from just two starting materials: iodobenzene and 4,4,6-trimethyl-2-vinyl-1,3,2-dioxaborinane via a series of Heck, Suzuki-Miyaura and stereocontrolled iododeboronation reactions. These results demonstrate how 4,4,6-trimethyl-2-vinyl-1,3,2-dioxaborinane can be used as a genuine two-carbon vinyl-dianion building block in stereocontrolled polyene synthesis.

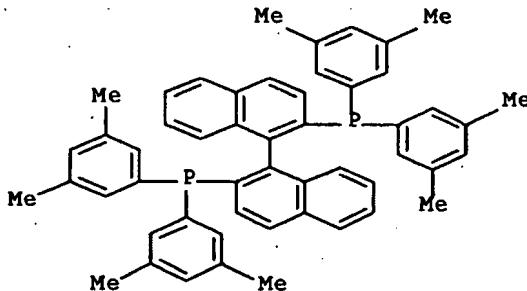
IT 98327-87-8

RL: CAT (Catalyst use); USES (Uses)  
 (preparation of diphenyl-1,3,5-hexatriene isomers via Heck vinylation,  
 Suzuki-Miyaura coupling and stereoselective iododeboronation using  
 trimethyl(vinyl)-1,3,2-dioxaborinane and iodobenzene as reactants)  
 RN 98327-87-8 HCAPLUS  
 CN Phosphine, 1,1'-(1,1'-binaphthalene)-2,2'-diylbis[1,1-diphenyl- (CA INDEX  
 NAME)]



REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 6 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2005:556846 HCAPLUS Full-text  
 DOCUMENT NUMBER: 143:248243  
 TITLE: Catalytic Enantioselective Fluorination of Oxindoles  
 AUTHOR(S): Hamashima, Yoshitaka; Suzuki, Toshiaki; Takano, Hisashi; Shimura, Yuta; Sodeoka, Mikiko  
 CORPORATE SOURCE: Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Miyagi, 980-8577, Japan  
 SOURCE: Journal of the American Chemical Society (2005), 127(29), 10164-10165  
 CODEN: JACSAT; ISSN: 0002-7863  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 143:248243  
 AB A highly efficient catalytic enantioselective fluorination of oxindole derivs. is reported. In the presence of a catalytic amount of a chiral Pd complex (2.5 mol %), various substrates, including aryl- and alkyloxindoles, were fluorinated in a highly enantioselective manner (< 96% ee). In addition, when the aryl substituent was Ph, enantioselective fluorination followed by solvolysis gave a monofluorinated ester with < 93% ee.  
 IT 135139-00-3  
 RL: CAT (Catalyst use); USES (Uses)  
 (catalytic enantioselective fluorination of oxindoles)  
 RN 135139-00-3 HCAPLUS  
 CN Phosphine, 1,1'-(1S)-[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-bis(3,5-dimethylphenyl)- (CA INDEX NAME)]



REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 7 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:302624 HCAPLUS Full-text

DOCUMENT NUMBER: 141:23199

TITLE: Simple large-scale preparation of 3,3-disubstituted cyclopropenes: easy access to stereodefined cyclopropylmetals via transition metal-catalyzed hydrometalation

AUTHOR(S): Rubin, Michael; Gevorgyan, Vladimir

CORPORATE SOURCE: Department of Chemistry, University of Illinois at Chicago, Chicago, IL, 60607-7061, USA

SOURCE: Synthesis (2004), (5), 796-800  
CODEN: SYNTBF; ISSN: 0039-7881

PUBLISHER: Georg Thieme Verlag

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 141:23199

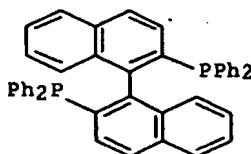
AB 3,3-Disubstituted cyclopropenes have been readily prepared on a multigram scale via two different methods: (1) dehydrohalogenation of bromocyclopropanes, and (2) Rh-catalyzed addition of carbenoids to trimethylsilylacetylene followed by desilylation. Highly diastereoselective Pd-catalyzed hydrostannation and highly enantioselective Rh-catalyzed hydroboration of 3,3-disubstituted cyclopropenes afforded useful cyclopropylmetal building blocks in high yields.

IT 76189-55-4

RL: CAT (Catalyst use); USES (Uses)  
(enantioselective hydroboration of cyclopropenes utilizing rhodium catalyst in presence of chiral BINAP ligand)

RN 76189-55-4 HCAPLUS

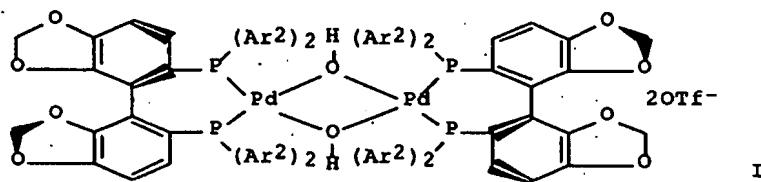
CN Phosphine, 1,1'-[{(1R)-[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl- (CA INDEX NAME)]}



REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 8 OF 16 HCPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2004:36960 HCPLUS Full-text  
 DOCUMENT NUMBER: 140:93701  
 TITLE: Method for preparation of optically active fluoro ketone compounds  
 INVENTOR(S): Sodeoka, Motoko; Hamashima, Yoshitaka  
 PATENT ASSIGNEE(S): Takasago Perfumery Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 30 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004010555	A	20040115	JP 2002-167944	20020607
PRIORITY APPLN. INFO.:			JP 2002-167944	20020607
OTHER SOURCE(S): GI		CASREACT 140:93701; MARPAT 140:93701		

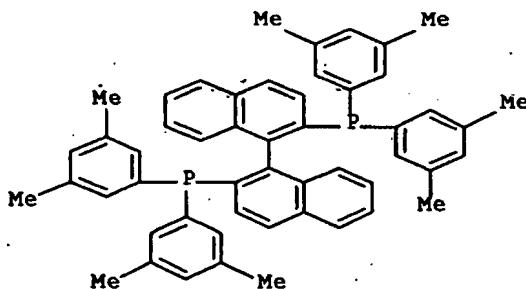


AB Optically active  $\alpha$ -fluoro ketones including  $\beta$ -fluoro keto esters of formula R1-Xn-CO-CF(R2)W [R1, R2 = each (un)substituted linear or cyclic hydrocarbyl, heterocyclyl, alkoxy, NH2, or acyloxy; one of R1 and R2 may be H; X = alkylene, NH, NR3, N(OH), N(OR4), O; R3, R4 = (un)substituted linear or cyclic hydrocarbyl or heterocyclyl; W = electron-withdrawing group; n = 0,1; or R1 and R2, R1 and W, or R2 and W are optionally linked to each other to form a ring] are prepared by reaction of ketones of formula R1-Xn-CO-CH(R2)W (R1, X, n, R2, W = same as above) with fluorinating agent in the presence of an asym. transition metal complex of formula [M2LpAq]y+(Z-)y or MLrBsDc [wherein L = an asym. ligand; Z- = an anion; A = a monovalent anionic ligand; M = a transition metal; p = 2, 4; y = 0, 2; B = H2O, a neutral ligand; D = an anionic ligand or counter anion; r = 1,2; s = an integer of 0-6; c = an integer of 0-2]. This asym. fluorination smoothly proceeds on substrates not bulky at the ester moiety and efficiently and selectively gives optically active  $\alpha$ -fluoro keto compds. of high optical activity. Optically active  $\alpha$ -fluoro keto compds. are intermediates for drugs, agrochems., or many other versatile chems. Thus, 29.2 mg  $[(Pd(R)-dtbm-segphos)(\mu-OH)]2+2(OTf)^2$  (II; Ar2 = 3,5-di-tert-butyl-4-methoxyphenyl) (0.02 mmol) was dissolved in 0.2 mL acetone, cooled to 5°, treated with 37 mg 2-oxocyclopentanecarboxylic acid tert-Bu ester (0.2 mmol), stirred for 10 min, treated with 95 mg N-fluorobenzenesulfonimide (0.3 mmol), stirred at 5° for 39 h, treated with saturated aqueous NH4Cl, and

extracted with EtOAc to give, after silica gel chromatog., 79% 1-fluoro-2-oxocyclopentanecarboxylic acid tert-Bu ester (95.6% ee).

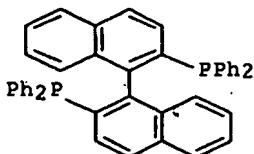
IT 135139-00-3  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (preparation of optically active fluoro ketone compds. by asym. fluorination  
 of ketones in presence of optically active phosphine transition metal complex)

RN 135139-00-3 HCPLUS  
 CN Phosphine, 1,1'-(1S)-[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-bis(3,5-dimethylphenyl)- (CA INDEX NAME)



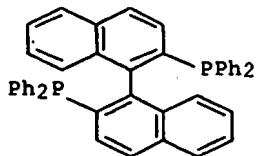
L45 ANSWER 9 OF 16 HCPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2003:336074 HCPLUS Full-text  
 DOCUMENT NUMBER: 139:69085  
 TITLE: Facile and Efficient Synthesis of meso-Arylamino- and Alkylamino-Substituted Porphyrins via Palladium-Catalyzed Amination  
 Chen, Ying; Zhang, X. Peter  
 AUTHOR(S):  
 CORPORATE SOURCE: Department of Chemistry, University of Tennessee, Knoxville, TN, 37996-1600, USA  
 SOURCE: Journal of Organic Chemistry (2003), 68(11), 4432-4438  
 CODEN: JOCEAH; ISSN: 0022-3263  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 139:69085  
 AB Meso-Arylamino- and alkylamino-substituted porphyrins were efficiently synthesized by reactions of meso-halogenated porphyrins with amines via palladium-catalyzed amination. The combination of palladium acetate and the com. available phosphine ligand bis(2-diphenylphosphinophenyl) ether (DPEphos) is effective for catalyzing the couplings of both [5-bromo-10,20-diphenyl porphyrinato]zinc(II) and [5,15-dibromo-10,20-diphenylporphyrinato]zinc(II) with amines to give the corresponding monoamino- and diamino-substituted porphyrins in high yields under mild conditions. The corresponding halogenated free-base porphyrins also underwent the cross-coupling reactions efficiently under similar catalytic conditions.  
 IT 98327-87-8  
 RL: CAT (Catalyst use); USES (Uses)  
 (palladium-catalyzed amination of bromo- and dibromoporphyrin zinc and free base to give meso-arylamino and alkylamino derivs.)  
 RN 98327-87-8 HCPLUS  
 CN Phosphine, 1,1'-(1,1'-binaphthalene)-2,2'-diylbis[1,1-diphenyl- (CA INDEX

NAME)



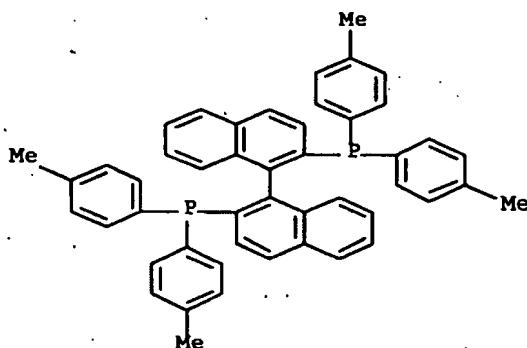
REFERENCE COUNT: 47 THERE ARE 47 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 10 OF 16 HCPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2003:72754 HCPLUS Full-text  
 DOCUMENT NUMBER: 138:254880  
 TITLE: New Palladium(II)-Catalyzed Asymmetric 1,2-Dibromide Synthesis  
 AUTHOR(S): El-Qisairi, Arab K.; Qaseer, Hanan A.; Katsigras, George; Lorenzi, Philip; Trivedi, Unnati; Tracz, Sylvia; Hartman, Amy; Miller, Jason A.; Henry, Patrick M.  
 CORPORATE SOURCE: Department of Chemistry, Loyola University of Chicago, Chicago, IL, 60626, USA  
 SOURCE: Organic Letters (2003), 5(4), 439-441  
 CODEN: ORLEF7; ISSN: 1523-7060  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 138:254880  
 AB Olefins undergo stereoselective and enantioselective bromination with bromide sources such as lithium bromide in the presence of nonracemic chiral monometallic and bimetallic palladium catalysts and copper (II) bromide under an oxygen atmospheric in aqueous-THF reaction mixts. to provide chiral 1,2-dibromides in 75-95% yields and 14-96% ee (all but one in 80-96% ee). E.g., in the presence of a binuclear palladium complex of (S)-BINAP and copper (II) bromide with added lithium bromide under an oxygen atmospheric in aqueous THF, Ph allyl ether gave 1,2-dibromo-3-phenoxypropane in >95% yield and in 95% ee by NMR. Terminal olefins give dibromides in about 95% ee.while internal alkenes give dibromides in about 80% ee.  
 IT 76189-56-5D, (S)-BINAP, mono- and binuclear palladium complexes  
 100165-88-6D, (S)-TolBINAP, binuclear palladium complexes  
 RL: CAT (Catalyst use); USES (Uses)  
 (stereo- and enantioselective preparation of 1,2-dibromides by bromination of alkenes with lithium bromide in the presence of mono- and binuclear palladium catalysts and copper (II) bromide)  
 RN 76189-56-5 HCPLUS  
 CN Phosphine, 1,1'-(1S)-[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl- (CA INDEX NAME)



RN 100165-88-6 HCAPLUS

CN Phosphine, 1,1'-(1S)-[1,1'-binaphthalene]-2,2'-diylbis[1,1-bis(4-methylphenyl)- (CA INDEX NAME)]



REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 11 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2002:888742 HCAPLUS Full-text

DOCUMENT NUMBER: 137:384846

TITLE: Process for preparation of indolylpyridinylmethyldioxinoquinolines and related compounds

INVENTOR(S): Chan, Anita Wai-Yin; Curran, Timothy Thomas; Iera, Silvio; Chew, Warren; Sellstedt, John Hamilton; Vid, Galina; Feigelson, Gregg; Ding, Zhixian

PATENT ASSIGNEE(S): Wyeth, John and Brother Ltd., USA

SOURCE: PCT Int. Appl., 59 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

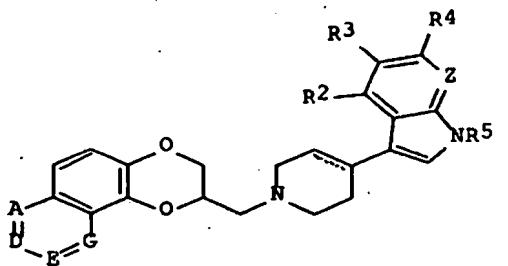
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002092602	A2	20021121	WO 2002-US15097	20020514
WO 2002092602	A3	20030227		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,				

PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ,  
 UA, UG, UZ, VN, YU, ZA, ZM, ZW  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,  
 CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,  
 BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG  
 CA 2447150 A1 20021121 CA 2002-2447150 20020514  
 AU 2002309769 A1 20021125 AU 2002-309769 20020514  
 US 2002187983 A1 20021212 US 2002-145369 20020514  
 US 6693197 B2 20040217  
 EP 1387845 A2 20040211 EP 2002-736790 20020514  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, LV, FI, RO, MK, CY, AL, TR  
 CN 1509290 A 20040630 CN 2002-810067 20020514  
 BR 2002009901 A 20040713 BR 2002-9901 20020514  
 JP 2004530693 T 20041007 JP 2002-589486 20020514  
 US 2004186123 A1 20040923 US 2003-734867 20031212  
 US 7038052 B2 20060502  
 US 2006074240 A1 20060406 US 2005-282202 20051118  
 US 7166723 B2 20070123  
 US 2007123705 A1 20070531 US 2006-566528 20061204  
 PRIORITY APPLN. INFO.: US 2001-291547P P 20010517  
 GI US 2002-145369 A3 20020514  
 WO 2002-US15097 W 20020514  
 US 2003-734867 A3 20031212  
 US 2005-282202 A3 20051118

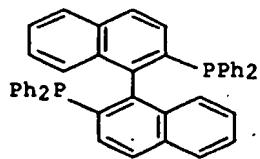
OTHER SOURCE(S): CASREACT 137:384846; MARPAT 137:384846  
 GI



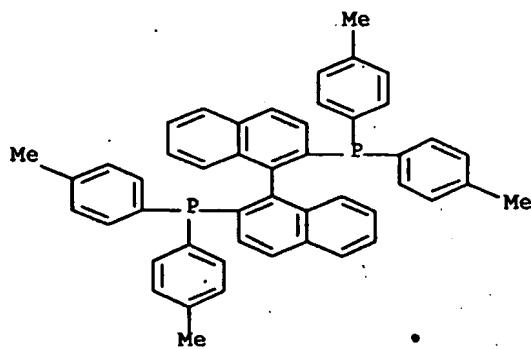
AB Title compds. [I; R1 = H, OH, halo, cyano, carboxamido, carboalkoxy, alkyl, alkanoyloxy, amino, mono- or dialkylamino, alkanamido, alkanesulfonamido; R2, R3, R4, R6 = H, OH, halo, cyano, carboxamido, carboalkoxy, CF3, alkyl, alkoxy, alkanoyloxy, amino, mono- or dialkylamino, alkanamido, alkanesulfonamido; R5 = H, alkyl; dotted line = optional double bond; A, D = CR1, N; provided that  $\geq 1$  of A and D = N; E, G = CR1; Z = N, CR6], were prepared by a 7-step process. Thus, [(2R)-8-methyl-2,3-dihydro[1,4]dioxino[2,3-f]quinolin-2-yl]methyl 4-methylbenzenesulfonate (preparation given), 3-(1,2,3,6-tetrahydropyridin-4-yl)-1H-indole (preparation given) and K2CO3 were heated in THF:DMF at 80-83° for 10 h to give 72% (2S)-2-[4-(1H-indol-3-yl)-3,6-dihydro-2H-pyridin-1-ylmethyl]-8-methyl-2,3-dihydro-1,4-dioxino[2,3-f]quinoline.

IT 98327-87-8, 2,2'-Bis(diphenylphosphino)-1,1'-binaphthyl  
 153305-67-0, 2,2'-Bis(di-p-tolylphosphino)-1,1'-binaphthyl  
 RL: CAT (Catalyst use); USES (Uses)  
 (cyclization catalyst; process for preparation of

indolylpyridinylmethyldioxinoquinolines and related compds.)  
 RN 98327-87-8 HCAPLUS  
 CN Phosphine, 1,1'-[1,1'-binaphthalene]-2,2'-diylbis[1,1-diphenyl- (CA INDEX  
 NAME)



RN 153305-67-0 HCAPLUS  
 CN Phosphine, 1,1'-[1,1'-binaphthalene]-2,2'-diylbis[1,1-bis(4-methylphenyl)- (CA INDEX NAME)



L45 ANSWER 12 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2002:695853 HCAPLUS Full-text  
 DOCUMENT NUMBER: 137:241482  
 TITLE: Chiral stationary phases based on derivatives of 4-amino-3,5-dinitrobenzoic acid  
 INVENTOR(S): Kontrec, Darko; Vinkovic, Vladimir; Sunjic, Vitomir; Mariotti, Paolo; Navarini, Luciano  
 PATENT ASSIGNEE(S): Eurand Pharmaceuticals Ltd., Ire.  
 SOURCE: PCT Int. Appl., 44 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002070124	A1	20020912	WO 2002-EP2437	20020306
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,				

LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,  
 PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ,  
 UA, UG, US, UZ, VN, YU, ZA, ZM, ZW  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,  
 CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,  
 BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

CA 2440639	A1	20020912	CA 2002-2440639	20020306
AU 2002238566	A1	20020919	AU 2002-238566	20020306
EP 1370356	A1	20031217	EP 2002-704733	20020306
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
NZ 528711	A	20040227	NZ 2002-528711	20020306
JP 2004531704	T	20041014	JP 2002-569287	20020306
US 2004144708	A1	20040729	US 2004-469899	20040224
US 7018537	B2	20060328		

PRIORITY APPLN. INFO.: IT 2001-MI473 A 20010307  
 WO 2002-EP2437 W 20020306

OTHER SOURCE(S): MARPAT 137:241482

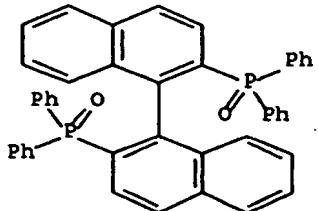
AB The invention describes new chiral stationary phases containing a 4-amino-3,5-dinitrobenzoic unit modified with chiral groups and spacer groups. The invention includes the process for the preparation of said stationary phases starting from 4-halogenated derivative of 3,5-dinitrobenzoic acid, chiral selectors obtainable as intermediates in the aforesaid process, and the use of the chiral stationary phases in the separation of enantiomers.

IT 86632-33-9 94041-16-4 94041-18-6

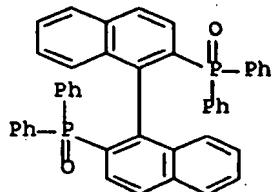
RL: ANT (Analyte); ANST (Analytical study)  
 (enantiomer resolution by chromatog. with chiral stationary phases based on derivs. of 4-amino-3,5-dinitrobenzoic acid)

RN 86632-33-9 HCPLUS

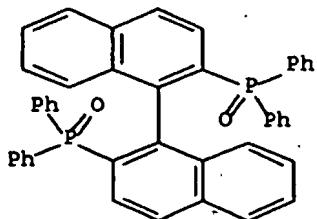
CN Phosphine oxide, [1,1'-binaphthalene]-2,2'-diylbis[diphenyl- (9CI) (CA INDEX NAME)]



RN 94041-16-4 HCPLUS  
 CN Phosphine oxide, (1R)-[1,1'-binaphthalene]-2,2'-diylbis[diphenyl- (9CI) (CA INDEX NAME)]



RN 94041-18-6 HCAPLUS

CN Phosphine oxide, (1S)-[1,1'-binaphthalene]-2,2'-diylbis[diphenyl- (9CI)  
(CA INDEX NAME)]

REFERENCE COUNT:

5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 13 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2002:640558 HCAPLUS Full-text  
 DOCUMENT NUMBER: 137:370431  
 TITLE: Palladium-catalyzed synthesis of oligo(methylthio)aniline and conversion to polyacene-type electrolytes bearing phenothiazinium repeating units  
 AUTHOR(S): Oyaizu, Kenichi; Mitsuhashi, Fumio; Tsuchida, Eishun  
 CORPORATE SOURCE: Advanced Research Institute for Science and Engineering, Waseda University, Tokyo, 169-8555, Japan  
 SOURCE: Macromolecular Chemistry and Physics (2002), 203(10/11), 1328-1336  
 PUBLISHER: Wiley-VCH Verlag GmbH  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

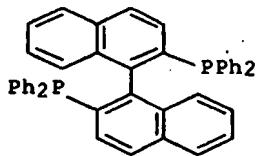
AB The synthetic routes to ladder polymers which consist of benzene-tetrayl subunits with imino and methylsulfonio linkages are described. As the key intermediate, oligo- and polyaniline derivs. having pendant methylthio groups were prepared by the Pd-catalyzed aryl amination from various monomers. The oxidation of the polymers with H2O2 in the presence of CH3COOH effects conversion of methylthio to methylsulfinyl groups in high yield without formation of undesired methylsulfonyl groups. The superacid-induced condensation of the polymers under dilution conditions induced the polymer-analogous intramol. electrophilic ring closure reaction of the hydroxy(methyl)(phenyl)sulfonium cation onto the adjacent benzene ring to yield the ladder polymers. The ladder polymers are semiconductors with intrinsic elec. conductivity of ca. 10<sup>-5</sup> S·cm<sup>-1</sup>.

IT 98327-87-8, BINAP

RL: CAT (Catalyst use); USES (Uses)  
 (catalyst ligand; preparation of monomers and Pd-catalyzed polymerization of oligo(methylthio)anilines and oxidation and cyclocondensation to obtain conducting phenothiazinium-based ladder polymers)

RN 98327-87-8 HCAPLUS

CN Phosphine, 1,1'-[1,1'-binaphthalene]-2,2'-diylbis[1,1-diphenyl- (CA INDEX NAME)]



REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 14 OF 16 HCPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2001:488405 HCPLUS Full-text

DOCUMENT NUMBER: 135:318255

TITLE: Nonenzymatic kinetic resolution of  $\beta$ -amino alcohols: chiral BINAP mediated SN2 displacement of hydroxy groups by halogens through formation of an aziridinium ion intermediate

AUTHOR(S): Sekar, Govindasamy; Nishiyama, Hisao

CORPORATE SOURCE: School of Materials Science, Toyohashi University of Technology, Tempaku-cho, Toyohashi, Aichi, 441-8580, Japan

SOURCE: Chemical Communications (Cambridge, United Kingdom) (2001), (14), 1314-1315

CODEN: CHCOFS; ISSN: 1359-7345

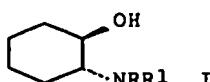
PUBLISHER: Royal Society of Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 135:318255

GI



AB A series of optically active cyclic trans- $\beta$ -amino alcs. were obtained (up to 97% ee) from nonenzymic kinetic resolution of corresponding racemic amino alcs. using com. available (S)-BINAP and N-chlorosuccinimide (NCS) by halogenation of hydroxy groups through formation of a meso-aziridinium ion intermediate. Thus, chiral aminocyclohexanols I (R, R1 = Me, Ph; Et, Ph; Me, 3-MeC6H4; Me, 4-MeC6H4; Me, 4-MeOC6H4; Et, 3-MeC6H4; Et, 4-MeC6H4; PhCH2, Ph; PhCH2, PhCH2) were obtained from kinetic resolution of their corresponding racemic substrates.

IT 76189-56-5

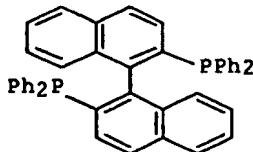
RL: CAT (Catalyst use); USES (Uses)

(kinetic resolution of racemic aminocyclohexanols via BINAP-mediated chlorination with N-chlorosuccinimide involving an aziridinium intermediate)

RN 76189-56-5 HCPLUS

CN Phosphine, 1,1'-(1S)-[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl-

(CA INDEX NAME)



REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 15 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1999:96236 HCAPLUS Full-text  
 DOCUMENT NUMBER: 130:139174  
 TITLE: Preparation of 1,2,3,4-tetrahydronaphthalenes as h5-HT1B antagonists  
 INVENTOR(S): Berg, Stefan; Linderberg, Mats; Ross, Svante; Thorberg, Seth-Olov; Ulff, Bengt  
 PATENT ASSIGNEE(S): Astra Aktiebolag (Publ), Swed.  
 SOURCE: PCT Int. Appl., 118 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9905134	A1	19990204	WO 1998-SE1390	19980715
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
TW 438781	B	20010607	TW 1998-87111330	19980713
CA 2296518	A1	19990204	CA 1998-2296518	19980715
AU 9883703	A	19990216	AU 1998-83703	19980715
AU 739569	B2	20011018		
EP 1000048	A1	20000517	EP 1998-934104	19980715
EP 1000048	B1	20021127		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
TR 200000229	T2	20000621	TR 2000-200000229	19980715
BR 9811042	A	20000815	BR 1998-11042	19980715
EE 200000041	A	20001016	EE 2000-41	19980715
EE 4238	B1	20040216		
HU 200004334	A2	20010328	HU 2000-4334	19980715
NZ 502384	A	20010525	NZ 1998-502384	19980715
JP 2001510837	T	20010807	JP 2000-504131	19980715
JP 3895923	B2	20070322		
AT 228510	T	20021215	AT 1998-934104	19980715

RU 2194696	C2	20021220	RU 2000-104802	19980715
PT 1000048	T	20030331	PT 1998-934104	19980715
ES 2187983	T3	20030616	ES 1998-934104	19980715
SK 283918	B6	20040504	SK 1999-1883	19980715
ZA 9806588	A	19990125	ZA 1998-6588	19980723
HR 980404	B1	20021031	HR 1998-404	19980723
US 6313118	B1	20011106	US 1998-171577	19981021
MX 200000676	A	20001113	MX 2000-676	20000119
NO 2000000356	A	20000327	NO 2000-356	20000124
NO 315609	B1	20030929		
US 6228857	B1	20010508	US 2000-621387	20000721
HK 1025963	A1	20030523	HK 2000-105178	20000817
US 2001051626	A1	20011213	US 2001-902000	20010710
US 6410532	B2	20020625		
US 2001051623	A1	20011213	US 2001-902123	20010710
US 6534652	B2	20030318		

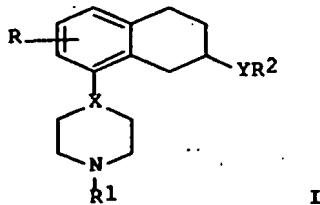
## PRIORITY APPLN. INFO.:

SE 1997-2799	A 19970725
WO 1998-SE1390	W 19980715
US 1998-171577	A2 19981021
SE 1999-190	A 19990122
WO 2000-SE79	A1 20000114

## OTHER SOURCE(S):

MARPAT 130:139174

GI

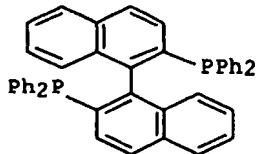


AB Title compds. [I; X = N, CH; Y = NHCH<sub>2</sub>, CH<sub>2</sub>NH, NHCO, CONH, NHSO<sub>2</sub>, etc.; R = OCF<sub>3</sub>, OCHF<sub>2</sub>, OCH<sub>2</sub>F, CN, OH, SO<sub>3</sub>Me, SO<sub>3</sub>CF<sub>3</sub>, F, Cl, Br, heterocyclic ring, etc.; R<sub>1</sub> = H, alkyl, cycloalkyl; R<sub>2</sub> = alkyl, cycloalkyl, aryl, arylmethyl, heterocyclic ring, etc.] as (R)-enantiomers, (S)-enantiomers or racemates in the form of a free base or pharmaceutically acceptable salts thereof, and pharmaceutical compns. containing title compds. are prepared via acylation, alkylation, halogenation, as h<sub>5</sub>-HT<sub>1B</sub> antagonists for use in the treatment of 5-hydroxytryptamine mediated disorders, disorders in the central nervous system. Thus, I, (X = N; R<sub>1</sub> = 5-CH<sub>3</sub>; Y = CONH; R<sub>2</sub> = 4-morpholinophenyl) was prepared and chromatog. separated via Chiral AGP semi-preparative column.

IT 76189-55-4, (R)-(+)-2,2'-Bis(diphenyl)phosphino-1,1'-binaphthyl  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(preparation of tetrahydronaphthalenes as h<sub>5</sub>-HT<sub>1B</sub> antagonists)

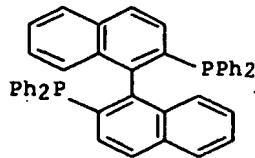
RN 76189-55-4 HCAPLUS

CN Phosphine, 1,1'-[(1R)-[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl- (CA INDEX NAME)]



REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 16 OF 16 HCPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1998:256706 HCPLUS Full-text  
 DOCUMENT NUMBER: 128:270640  
 TITLE: Systematic Variation of Bidentate Ligands Used in Aryl Halide Amination. Unexpected Effects of Steric, Electronic, and Geometric Perturbations  
 AUTHOR(S): Hamann, Blake C.; Hartwig, John F.  
 CORPORATE SOURCE: Department of Chemistry, Yale University, New Haven, CT, 06520-8107, USA  
 SOURCE: Journal of the American Chemical Society (1998), 120(15), 3694-3703  
 CODEN: JACSAT; ISSN: 0002-7863  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB This paper presents effects of varying bidentate phosphine steric properties, electronic properties, and bite angle on product ratios in the amination of aryl bromides. Comparisons of the ratios of amine products to dehydrohalogenation products showed that catalysts containing electron rich, modestly hindered phosphines with small bite angles (apprx. 90°) gave the best selectivities. Surprisingly, the arene side product formed from reaction of alkylamines deuterated in the N-H position or deuterated in the position  $\alpha$  to the nitrogen showed low levels of deuterium incorporation in many examples. Steric properties and ligand bite angle had the greatest impact on the selectivity for monoarylation vs. diarylation of primary amines; ligands with small bite angles gave higher monoarylation-to-diarylation ratios, as did ligands with increased steric bulk. Electron poor or sterically hindered bidentate phosphines reduced the amount of product resulting from aryl exchange of electron rich palladium-bound arenes with those of aryl groups on the phosphine ligands.  
 IT 98327-87-8, 2,2'-Bis(diphenylphosphino)-1,1'-binaphthyl  
 RL: CAT (Catalyst use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)  
 (systematic variation of bidentate ligands used in aryl halide amination and unexpected effects of steric, electronic, and geometric perturbations)  
 RN 98327-87-8 HCPLUS  
 CN Phosphine, 1,1'-[1,1'-binaphthalene]-2,2'-diylbis[1,1-diphenyl- (CA INDEX NAME)

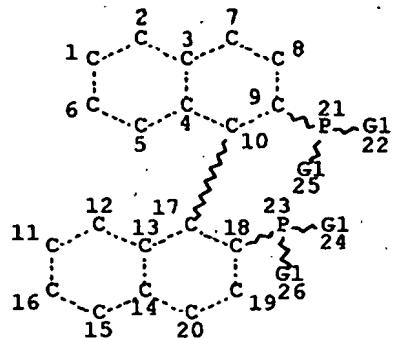


REFERENCE COUNT:

58

THERE ARE 58 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> => d stat que 149  
 L2 STR



VAR G1=AK/CY

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

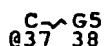
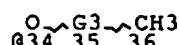
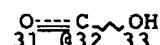
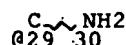
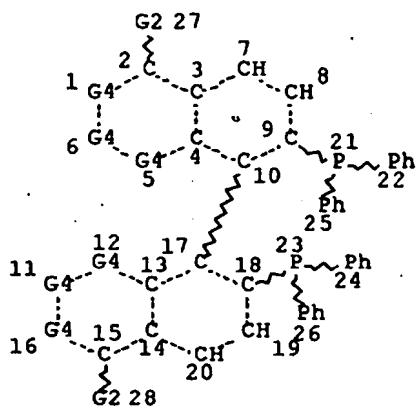
GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 26

STEREO ATTRIBUTES: NONE

L4 563 SEA FILE=REGISTRY SSS FUL L2  
 L14 STR



VAR G2=AK/CN/29/32

REP G3=(0-3) C

VAR G4=CH/37

VAR G5=AK/34

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

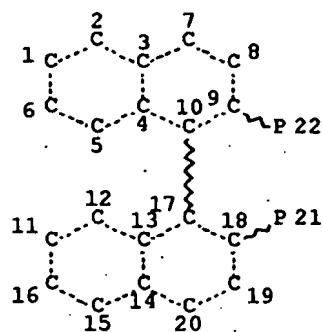
NUMBER OF NODES IS 38

STEREO ATTRIBUTES: NONE

L16 18 SEA FILE=REGISTRY SUB=L4 SSS FUL L14

L17 7 SEA FILE=HCAPLUS ABB=ON PLU=ON L16

L19 STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

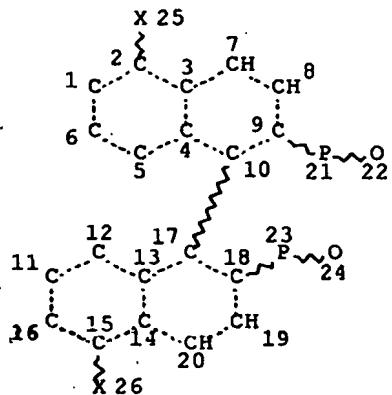
GRAPH ATTRIBUTES:

RSPEC I

NUMBER OF NODES IS 22

STEREO ATTRIBUTES: NONE

L21 553 SEA FILE=REGISTRY SSS FUL L19  
L23 STR



NODE ATTRIBUTES:

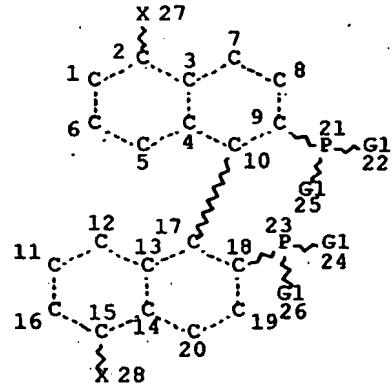
DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 26

STEREO ATTRIBUTES: NONE

L24 3 SEA FILE=REGISTRY SUB=L21 SSS FUL L23  
L25 550 SEA FILE=REGISTRY ABB=ON PLU=ON L21 NOT L24  
L26 STR



VAR G1=AK/CY

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 28

STEREO ATTRIBUTES: NONE

L27 5 SEA FILE=REGISTRY SUB=L4 SSS FUL L26  
 L28 540 SEA FILE=REGISTRY ABB=ON PLU=ON L4 NOT (L16 OR L27)  
 L29 1674 SEA FILE=HCAPLUS ABB=ON PLU=ON L25  
 L30 6 SEA FILE=HCAPLUS ABB=ON PLU=ON L24  
 L31 6 SEA FILE=HCAPLUS ABB=ON PLU=ON L27  
 L32 1680 SEA FILE=HCAPLUS ABB=ON PLU=ON L28  
 L33 0 SEA FILE=HCAPLUS ABB=ON PLU=ON (L30 OR L31) NOT L17  
 L34 215 SEA FILE=HCAPLUS ABB=ON PLU=ON L28/P  
 L35 211 SEA FILE=HCAPLUS ABB=ON PLU=ON L29 AND L34  
 L36 116181 SEA FILE=HCAPLUS ABB=ON PLU=ON (HALOGENATION/CV OR "HALOGENATION (L) AGENTS"/CV OR "HALOGENATING AGENTS"/CV OR "OXIDATIVE HALOGENATION"/CV OR BROMINATION/CV OR CHLORINATION/CV OR FLUORINATION/CV OR IODINATION/CV OR "HALOGENATION CATALYSTS"/CV OR "HALOGENATION KINETICS"/CV OR HALOGENS/CV) OR ?HALOGENAT?  
 L37 1280589 SEA FILE=HCAPLUS ABB=ON PLU=ON ("REDOX REACTION"/CV OR REDUCTION/CV) OR ?REDUCT?  
 L40 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L29 AND L36 AND L37  
 L41 4 SEA FILE=HCAPLUS ABB=ON PLU=ON L40 NOT (L17 OR L33)  
 L42 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L41 AND L35  
 L43 22 SEA FILE=HCAPLUS ABB=ON PLU=ON L29 AND L36 AND L32  
 L44 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L36 AND L37 AND L32  
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 L48 15 SEA FILE=HCAPLUS ABB=ON PLU=ON ("BERTHOD M"/AU OR "BERTHOD MICHAEL"/AU OR "BERTHOD MIKAEEL"/AU OR "BERTHOD MIKAEL"/AU)  
 L49 40 SEA FILE=HCAPLUS ABB=ON PLU=ON (L47 OR L48) NOT (L17 OR L33 OR L42 OR L45)

=> d ibib abs hitstr 149 1-40

L49 ANSWER 1 OF 40. HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2007:382460 HCAPLUS Full-text

TITLE: New 5,5'-disubstituted BINAP derivatives: Syntheses and pressure and electronic effects in Rh asymmetric hydrogenation

AUTHOR(S): Alame, M.; Jahjah, M.; Berthod, M.; Lemaire, M.; Meille, V.; de Bellefon, C.

CORPORATE SOURCE: Laboratoire de Genie des Procedes Catalytiques, UMR 2214, CNRS-CPE Lyon, Villeurbanne, 69616, Fr.

SOURCE: Journal of Molecular Catalysis A: Chemical (2007), 268(1-2), 205-212

PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A library of 5,5'-disubstituted BINAP derivs. were synthesized in good yield from optically pure BINAP and evaluated for the Rh-catalyzed homogeneous asym. hydrogenation of ( $\alpha$ )-acylaminoacrylate ester, with ee of up to 77% being obtained with the Ph derivative. The enantiomeric excess variation was followed according to the groups introduced in the 5,5'-position of BINAP and for a range of pressure from 5 to 30 bar.

L49 ANSWER 2 OF 40 HCPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2006:855380 HCPLUS Full-text  
 DOCUMENT NUMBER: 145:438973  
 TITLE: Chiral polyamino alcohols and polyamino thiols for  
 asymmetric heterogeneous catalysis  
 AUTHOR(S): Herault, Damien; Saluzzo, Christine;  
 Lemaire, Marc  
 CORPORATE SOURCE: UMR 5622, UCBL, CPE, Laboratoire de Catalyse et  
 Synthese Organique, Villeurbanne, 69622, Fr.  
 SOURCE: Tetrahedron: Asymmetry (2006), 17(13), 1944-1951  
 CODEN: TASYE3; ISSN: 0957-4166  
 PUBLISHER: Elsevier B.V.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 145:438973

AB A series of macroporous copolymer beads were synthesized by THE free radical suspension copolymn. of (S)-glycidyl methacrylate (GMA), (S)-thiiranylmethylmethacrylate (TMA), or (R,R)-phenylglycidylmethacrylate (Ph-GMA) with ethyleneglycol dimethacrylate (EDMA) or divinylbenzene (DVB). This allowed for the evaluation of their chemical and phys. properties (polymer matrix nature or the structure of the heterocyclopropane) and their influence on the catalytic efficiency. These chiral polymers were subsequently transformed into polyamino alc. or polyamino thiol derivs. by the facile ring opening of the oxirane or thiirane group with benzylamine and methylamine. Complexed with [RuCl<sub>2</sub>(p-cymene)]<sub>2</sub>, these derivs. were shown to be effective in the asym. hydrogen transfer reduction of acetophenone. The best results (conversion: 94%, ee: 71%) were obtained with benzylamine grafted onto poly(GMA-co-EDMA) (30/70 % wt/wt).

REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L49 ANSWER 3 OF 40 HCPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2006:394652 HCPLUS Full-text  
 DOCUMENT NUMBER: 146:206723  
 TITLE: Preparation of monodisperse enantiomerically pure  
 glycidyl methacrylate-ethylene glycol dimethacrylate  
 copolymers in dispersion copolymerization:  
 Functionalization  
 AUTHOR(S): Herault, Damien; Saluzzo, Christine;  
 Lemaire, Marc  
 CORPORATE SOURCE: Centre Scientifique de la Doua, Laboratoire de  
 Catalyse et Synthèse Organique UMR-CNRS 5181,  
 Université Claude Bernard Lyon 1, Villeurbanne, 69622,  
 Fr.  
 SOURCE: Reactive & Functional Polymers (2006), 66(5), 567-577  
 CODEN: RFPOF6; ISSN: 1381-5148  
 PUBLISHER: Elsevier B.V.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB Syntheses of monodisperse poly(glycidyl methacrylate)-co-(ethylene glycol dimethacrylate) were carried out by single stage dispersion radical copolymn. Particles in the range of 1.0-3.0  $\mu\text{m}$  were prepared in ethanol using 2,2'-azobisisobutyronitrile as the initiator and poly(vinyl pyrrolidone) as a polymeric stabilizer. The effects of different polymerization parameters, such as crosslinking monomer concentration, dispersant mol. weight, dilution and dispersant/monomer ratio on an average particle size and size distribution are reported. The best conditions were applied to (R) and (S)-glycidyl methacrylate in order to form poly((R) and (S)-glycidyl methacrylate)-co-

(ethylene glycol dimethacrylate). Nucleophiles such as benzylamine, oxa-aza and aza crown ethers, -Me prolinate and  $\beta$ -cyclodextrine acting have been coupled to these oxirane containing polymers. The concentration of the added nucleophile on the modified resin varied from 0.26 to 3.35 mmol/g resin.

REFERENCE COUNT: 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L49 ANSWER 4 OF 40 HCPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2005:1152798 HCPLUS Full-text  
 DOCUMENT NUMBER: 143:422121  
 TITLE: Reduction of oxygen-containing functional groups  
 INVENTOR(S): Berthod, Mikael; Lemaire, Marc; Mignani, Gerard  
 PATENT ASSIGNEE(S): Rhodia Chimie, Fr.; Centre National de la Recherche Scientifique CNRS  
 SOURCE: Fr. Demande, 41 pp.  
 CODEN: FRXXBL  
 DOCUMENT TYPE: Patent  
 LANGUAGE: French  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2869313	A1	20051028	FR 2004-4326	20040423
CA 2563928	A1	20051124	CA 2005-2563928	20050420
WO 2005110948	A1	20051124	WO 2005-FR975	20050420
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1753707	A1	20070221	EP 2005-759985	20050420
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR				
CN 1968914	A	20070523	CN 2005-80018390	20050420
PRIORITY APPLN. INFO.:			FR 2004-4326	A 20040423
			WO 2005-FR975	W 20050420
OTHER SOURCE(S):	CASREACT 143:422121; MARPAT 143:422121			
AB	The authors present a method for reduction of oxygen-containing compds. using a siloxane $H(R1)2SiO[Si(R2)2O]xSi(R1)2H$ ( $R1, R2 =$ alkyl, cycloalkyl, aryl; $x = 0-50$ ) and a Lewis acid catalyst such as $Ti(O\text{-isoPr})_4$ in an organic solvent such as toluene. For example, reduction of the dioxide of BINAP gave the BINAP in 91% yield under these conditions. Benzonitrile was also reduced to benzylamine in 60% yield.			
REFERENCE COUNT:	5	THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT		

L49 ANSWER 5 OF 40 HCPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2005:971940 HCPLUS Full-text  
 DOCUMENT NUMBER: 143:405679

TITLE: Approach to the blues: a highly flexible route to the azulenes  
 AUTHOR(S): Carret, Sebastien; Blanc, Aurelien; Coquerel, Yoann; Berthod, Mikael; Greene, Andrew E.; Depres, Jean-Pierre  
 CORPORATE SOURCE: Chim. Recherche (LEDSS), Univ. Joseph Fourier, Grenoble, 38041, Fr.  
 SOURCE: Angewandte Chemie, International Edition (2005), 44(32), 5130-5133  
 CODEN: ACIEF5; ISSN: 1433-7851  
 PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 143:405679  
 AB A palette of blues: chloro bicyclo[5.3.0]decatrienone derivs. are readily prepared from cycloheptatrienes by cycloaddn. of dichloro ketene, ring expansion with a diazo alkane, and dehydrochlorination in DMF. These compds. are used as intermediates in the regio-controlled synthesis of a wide variety of natural and non-natural azulenes.  
 REFERENCE COUNT: 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

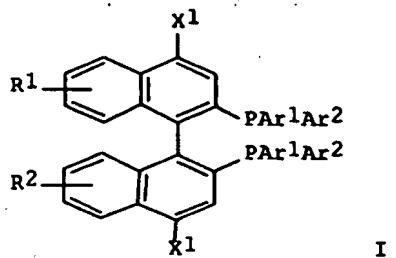
L49 ANSWER 6 OF 40 HCPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2005:331856 HCPLUS Full-text  
 DOCUMENT NUMBER: 144:22472  
 TITLE: Catalytic asymmetric hydrogenation of ethyltrifluoroacetoacetate with 4,4' and 5,5'-diamBINAP Ru(II) complexes in unusual conditions  
 AUTHOR(S): Berthod, Mikael; Mignani, Gerard; Lemaire, Marc  
 CORPORATE SOURCE: Laboratoire de Catalyse et de Synthese Organique, UMR 5181, UCBL, CPE Bat. 308, 43, Villeurbanne, 69622, Fr.  
 SOURCE: Journal of Molecular Catalysis A: Chemical (2005), 233(1-2), 105-110  
 CODEN: JMCCF2; ISSN: 1381-1169  
 PUBLISHER: Elsevier B.V.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 144:22472  
 AB The catalytic asym. hydrogenation of Et trifluoroacetoacetate with 4,4'- and 5,5'-diamBINAP-Ru(II) complexes was studied. An increased enantioselectivity was observed when hydrogenation was done in biphasic water/organic solvent conditions. Addition of acid increase the selectivity too. It was proposed an explanation based onto the keto-enol-hydrate or hemiketal equilibrium  
 REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L49 ANSWER 7 OF 40 HCPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2005:331466 HCPLUS Full-text  
 DOCUMENT NUMBER: 142:481570  
 TITLE: Modified BINAP: The How and the Why  
 AUTHOR(S): Berthod, Mikael; Mignani, Gerard; Woodward, Gary; Lemaire, Marc  
 CORPORATE SOURCE: Laboratoire de Catalyse et Synthese Organique, UCBL-CPE, Villeurbanne, 69622, Fr.  
 SOURCE: Chemical Reviews (Washington, DC, United States) (2005), 105(5), 1801-1836  
 CODEN: CHREAY; ISSN: 0009-2665

PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal; General Review  
 LANGUAGE: English  
 AB A review of the synthesis and applications of BINAP ligands in asym. catalysis.  
 REFERENCE COUNT: 198 THERE ARE 198 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L49 ANSWER 8 OF 40 HCPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2004:931029 HCPLUS Full-text  
 DOCUMENT NUMBER: 141:397266  
 TITLE: Chiral diphosphines in insoluble form, their preparation, and their uses as ligands in the synthesis of complexes destined for asymmetric catalysis  
 INVENTOR(S): Lemaire, Marc; Berthod, Mikael  
 PATENT ASSIGNEE(S): Rhodia Chimie, Fr.; Centre National de la Recherche Scientifique CNRS  
 SOURCE: Fr. Demande, 53 pp.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: French  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2854401	A1	20041105	FR 2003-5253	20030429
PRIORITY APPLN. INFO.:			FR 2003-5253	20030429
OTHER SOURCE(S): GI		MARPAT 141:397266		



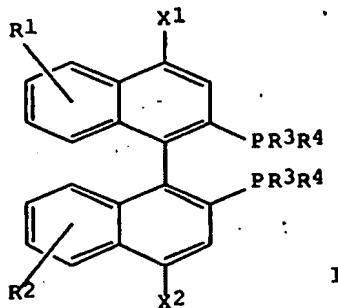
AB Chiral diphosphines I (R1, R2 = H or substituent; Ar1, Ar2 = alkyl, alkenyl, cycloalkyl, aryl, or aralkyl; X1 = amino, aminomethyl, OH, HOCH2, carboxylic, ester, NCO, or OCNCH2) are polymerized with the appropriate condensation polymer-forming monomer to give optically active polymers that are able to complex with transition metals to give complexes for asym. hydrogenation catalysis. The optically active polymers are also useful for catalysts in association with diamines for selective reduction of ketones. A typical catalyst, useful for hydrogenation of Et acetoacetate to Et 3-hydroxybutyrate, was manufactured by polymerization of (S)-4,4'-diaminomethylBINAP with 2,6-diisocyanatotoluene and complexation of the polymer with Ru.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L49 ANSWER 9 OF 40 HCPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2004:847213 HCPLUS Full-text  
 DOCUMENT NUMBER: 141:350269  
 TITLE: Water-soluble chiral diphosphines and their uses as ligands on transition-metal catalysts for asymmetric synthesis  
 INVENTOR(S): Lemaire, Marc; Saluzzo, Christine;  
 Berthod, Mikael  
 PATENT ASSIGNEE(S): Rhodia Chimie, Fr.; Centre National de la Recherche Scientifique CNRS  
 SOURCE: Fr. Demande, 64 pp.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: French  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2853652	A1	20041015	FR 2003-4391	20030409
PRIORITY APPLN. INFO.:			FR 2003-4391	20030409
OTHER SOURCE(S):	MARPAT 141:350269			
GI				



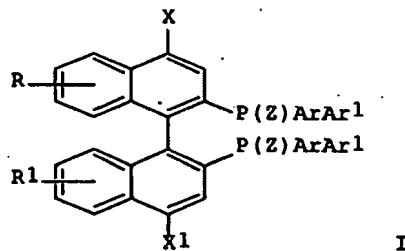
AB Racemic or optically active, water-soluble, 4,4'-disubstituted binaphthyl-derived diphosphines (I; R1, R2 = H, substituent; R3, R4 = alkyl, alkenyl, cycloalkyl, aryl, arylalkyl; X1, X2 = H or water-soluble group such as ammonium, guanidinium, amino modified by linear polyoxyalkylene chain, carboxylate; at most 1 of X1 or X2 = H, at least 1 of X1 or X2 = cited functional groups), useful as ligands on transition-metal catalysts, preferably Rh, Ru, or Ir, for asym. synthesis, preferably asym. hydrogenation, are claimed. The substituents in the 4,4'-positions are chosen to ensure a better solubility in aqueous phase. Thus, hydrogenation of MeCOCH2CO2Et in presence of dibromoruthenium catalysts containing an (R)- or (S)-I (R1 = R2 = H, R3 = R4 = Ph, X1 = X2 = CH2N+H3 Br-; preparation given) gave MeCH(OH)CH2CO2Et in 100% conversions and 97-100% ee in many cases.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L49 ANSWER 10 OF 40 HCAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2004:5i5338 HCAPLUS Full-text  
DOCUMENT NUMBER: 141:71717  
TITLE: Chiral 4,4'-disubstituted binaphthyl diphosphines,  
their preparation, and their uses as ligands in  
asymmetric hydrogenation catalysts  
INVENTOR(S): Lemaire, Marc; Saluzzo, Christine;  
Berthod, Mikael  
PATENT ASSIGNEE(S): Rhodia Chimie, Fr.; Centre National De La Recherche  
Scientifique Cnrs  
SOURCE: Fr. Demande, 41 pp.  
CODEN: FRXXBL  
DOCUMENT TYPE: Patent  
LANGUAGE: French  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2849037	A1	20040625	FR 2002-16087	20021218
PRIORITY APPLN. INFO.:			FR 2002-16087	20021218
OTHER SOURCE(S):			CASREACT 141:71717; MARPAT 141:71717	
GI				



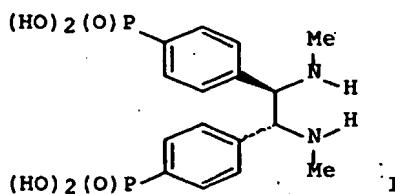
**AB** Racemic and optically active diphosphines I [ $Z$  = lone pair; R, R1 = H, Cl-6 alkyl, Cl-6 alkoxy, etc.; Ar, Ar1 = alkyl, alkenyl, cycloalkyl, aryl, aralkyl, preferably Ph; X, X1 = (un)substituted alkyl, alkenyl, alkynyl, cycloalkyl, aryl, aralkyl, OH, CN, CH2NH2, CO2H or esters, CH2OH, NHNH2, N3, Mg, Li, etc., preferably fluoro-substituted alkyl, CN, CH2NH2, CO2H] and bis(phosphine oxide)s I [ $Z$  = O; same R, R1, Ar, Ar1, X, X1] useful, in their optically active form, as ligands for ruthenium, rhodium or iridium catalysts in asym. organic synthesis and in particular for enantioselective hydrogenation of C:C or C:O double bonds, are claimed, as are processes for preparation of I. In an example, treating 0.0235 mmol (S)- or (R)-I ( $Z$  = lone pair; R = R1 = H; Ar = Ar1 = Ph; X = X1 = CH2NH2; preparation given) in 1 mL CH2Cl2 with 0.0235 mmol bis(2-methylallyl)(1,5-cyclooctadiene)ruthenium for 30 min, followed by evaporation of solvent and addition of MeOH or EtOH solvent and Me or Et acetoacetate substrate with a substrate-to-catalyst ratio of 1000:1 and hydrogenation at 40 bar H2 at 50° for 15 h gave 100% conversions to the

corresponding alc. with >99% ee, where the configuration of the alc. product depended on the chirality of I used.

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L49 ANSWER 11 OF 40 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2002:858569 HCAPLUS Full-text  
 DOCUMENT NUMBER: 138:237556  
 TITLE: Homogeneous-supported catalysts for enantioselective hydrogenation and hydrogen transfer reduction  
 AUTHOR(S): Saluzzo, Christine; Lemaire, Marc  
 CORPORATE SOURCE: Laboratoire de Catalyse et Synthese Organique, Universite Claude Bernard, CPE, Villeurbanne, 69622, Fr.  
 SOURCE: Advanced Synthesis & Catalysis (2002), 344(9), 915-928  
 CODEN: ASCAF7; ISSN: 1615-4150  
 PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA  
 DOCUMENT TYPE: Journal; General Review  
 LANGUAGE: English  
 AB A review. Several recent approaches for the homogeneous-supported catalysts in the fields of hydrogenation using BINAP ligand derivs. and hydrogen transfer reduction with diamines or amino alc. ligands are reviewed in order to point out efficient recyclable catalytic systems.  
 REFERENCE COUNT: 110 THERE ARE 110 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L49 ANSWER 12 OF 40 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2002:810897 HCAPLUS Full-text  
 DOCUMENT NUMBER: 138:55645  
 TITLE: Synthesis of a new water-soluble C2-symmetric chiral diamine: preliminary investigation of its catalytic properties for asymmetric hydrogenation under biphasic conditions  
 AUTHOR(S): Maillet, Celine; Praveen, Thoniyot; Janvier, Pascal; Minguet, Sebastien; Evain, Michel; Saluzzo, Christine; Tommasino, M. Lorraine; Bujoli, Bruno  
 CORPORATE SOURCE: Laboratoire de Synthese Organique, UMR CNRS 6513, Nantes, 44322, Fr.  
 SOURCE: Journal of Organic Chemistry (2002), 67(23), 8191-8196  
 CODEN: JOCEAH; ISSN: 0022-3263  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 138:55645  
 GI



AB A water-soluble version of N,N'-dimethyl-1,2-diphenylethane-1,2-diamine was prepared by introduction of phosphonic acid moieties on the para position of the aromatic rings to provide both the d and l-isomers of I. Preliminary investigation of the catalytic properties of the iridium complex of this ligand under biphasic conditions showed that this system compared well with the homogeneous counterpart for the asym. hydrogenation of ketones but with noticeably higher reaction rates for the biphasic system.

REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L49 ANSWER 13 OF 40 HCPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2002:782719 HCPLUS Full-text

DOCUMENT NUMBER: 137:263180

TITLE: Preparation of chiral ( $\beta$ -aminoalkyl)phosphines, -phosphites, -phosphonites, and -phosphinites and use of their platinum-group metal complexes in asymmetric catalysis

INVENTOR(S): Lemaire, Marc; Pellet Rostaing, Stephane; Breuzard, Jeremy; Ter Halle, Rod; Saluzzo, Christine; Vallet, Martial

PATENT ASSIGNEE(S): Rhodia Chimie, Fr.

SOURCE: Fr. Demande, 57 pp.

CODEN: FRXXBL

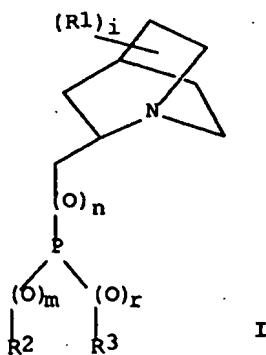
DOCUMENT TYPE: Patent

LANGUAGE: French

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2810666	A1	20011228	FR 2000-8024	20000622
FR 2810666	B1	20021108		
PRIORITY APPN. INFO.:			FR 2000-8024	20000622
OTHER SOURCE(S):			CASREACT 137:263180; MARPAT 137:263180	
GI				



AB Organophosphorus compds. I (e.g. (2S,4S,5R)-2-diphenylphosphinomethyl-5-ethylquinuclidine), platinum-group metal complexes of I, asym. catalysis (Kumada-Corriu cross coupling, hydrosilylation, hydroformylation) by the complexes and methods for preparation of I are claimed. In I, R1 represents a H atom; a saturated or unsatd. aliphatic hydrocarbon radical; a saturated, unsatd. or aromatic carbocyclic radical; or a radical including one part saturated or unsatd. aliphatic hydrocarbon and one part saturated, unsatd. or aromatic carbocyclic; i is 0-12; n, m and r are independently 0 or 1; R2 and R3 independently represent a saturated or aromatic carbocyclic radical, R2 and R3 being optionally connected to one another by a C-C bond.

## L49 ANSWER 14 OF 40. HCPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2002:543647 HCPLUS Full-text

DOCUMENT NUMBER: 138:89485

TITLE: Synthesis and studies of 6,6'-BINAP derivatives for the heterogeneous asymmetric hydrogenation of methyl acetoacetate

AUTHOR(S): Saluzzo, Christine; Lamouille, Thierry; Le Guyader, Frederic; Lemaire, Marc

CORPORATE SOURCE: CPE, UMR 5622, Laboratoire de Catalyse et Synthese Organique, Universite Claude Bernard, Villeurbanne, 69622, Fr.

SOURCE: Tetrahedron: Asymmetry (2002), 13(11), 1141-1146

CODEN: TASYE3; ISSN: 0957-4166

Elsevier Science Ltd.

PUBLISHER: Journal

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 138:89485

AB New BINAP derivs. (polyamide, polyureas or ureas) were synthesized and employed in the ruthenium-catalyzed asym. heterogeneous hydrogenation of Me acetoacetate. Enantiomeric excesses in the range 48-100% were observed. Furthermore, the most efficient have been recovered and the recycled catalysts were shown to maintain their efficiency in subsequent reactions.

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

## L49 ANSWER 15 OF 40 HCPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2002:481776 HCPLUS Full-text

DOCUMENT NUMBER: 138:72795

TITLE: Polymer-Supported catalysts: Enantioselective hydrogenation and hydrogen transfer reduction

AUTHOR(S): Saluzzo, Christine; Lamouille, Thierry; Herault, Damien; Lemaire, Marc

CORPORATE SOURCE: Laboratoire de Catalyse et Synthese Organique, CPE, UMR 5622, Universite Claude Bernard Lyon 1, Villeurbanne, 69622, Fr.

SOURCE: Bioorganic &amp; Medicinal Chemistry Letters (2002), 12(14), 1841-1844

CODEN: BMCLE8; ISSN: 0960-894X

Elsevier Science Ltd.

PUBLISHER: Journal

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 138:72795

AB Different types of heterogenized catalysts were involved in asym. reactions. Hydrogen transfer reduction was performed with amino alcs. derived from poly((S)-(GMA-co-EGDMA or DVB)) and hydrogenation with BINAP grafted onto PEG

or copolymerd. with isocyanates as ligands. Attempts of catalysts recycling are reported.

REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L49 ANSWER 16 OF 40 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2002:408711 HCAPLUS Full-text  
 DOCUMENT NUMBER: 137:6606  
 TITLE: Optically active polymer with epoxide functions, method for preparing same, and use thereof  
 INVENTOR(S): Lemaire, Marc; Saluzzo, Christine; Rolland, Alice; Touchard, Francois; Herault, Damien  
 PATENT ASSIGNEE(S): University Claude Bernard Lyon I, Fr.; Centre National de la Recherche Scientifique CNRS  
 SOURCE: PCT Int. Appl., 82 pp.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: French  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002042346	A1	20020530	WO 2001-FR3705	20011123
W: JP, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
FR 2816948	A1	20020524	FR 2000-15147	20001123
FR 2816948	B1	20030221		
EP 1341828	A1	20030910	EP 2001-997513	20011123
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				
JP 2004514751	T	20040520	JP 2002-545060	20011123
US 2004068068	A1	20040408	US 2003-432550	20031023
PRIORITY APPLN. INFO.:			FR 2000-15147	A 20001123
			WO 2001-FR3705	W 20011123

AB Optically active polymers are manufactured by polymerization of  $\alpha,\beta$ -unsatd. carbonyl group-containing compound having epoxide groups with  $\geq 1$  chiral center with monomers having 2  $\alpha,\beta$ -unsatd. carbonyl group or monomers having 2 vinyl groups. Said polymers are useful, optionally after the epoxide functions are opened, for immobilizing enzymes, as polymeric matrix for chiral chromatog., as polymeric support for solid phase synthesis, as ligand for preparing transition metal complexes in regioselective catalysis or as chiral inducer in regioselective catalyst. A typical polymer was manufactured by radical polymerization of 6.13 g (R)-glycidyl methacrylate with 14.3 g ethylene glycol dimethacrylate in cyclohexanol-dodecanol mixture emulsified in an aqueous phase containing polyvinylpyrrolidone at 70-80°.

REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L49 ANSWER 17 OF 40 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2002:379737 HCAPLUS Full-text  
 DOCUMENT NUMBER: 137:384607  
 TITLE: Enantiopure beads: a tool for asymmetric heterogeneous catalysis  
 AUTHOR(S): Herault, Damien; Saluzzo, Christine; Duval, Raphael; Lemaire, Marc  
 CORPORATE SOURCE: Laboratoire de Catalyse et Synthese Organique, CPE,

SOURCE: UCBL, UMR 5622, Villeurbanne, 69622, Fr.  
 Journal of Molecular Catalysis A: Chemical (2002),  
 182-183, 249-256  
 CODEN: JMCCF2; ISSN: 1381-1169

PUBLISHER: Elsevier Science B.V.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 137:384607

AB A copolymer containing enantiopure epoxy groups was prepared in excellent yield by radical suspension copolymer of (S)-glycidyl methacrylate with ethylene glycol dimethacrylate. In order to control the phys. and surfaces properties of the copolymer, we studied the influence of the stirring rate reaction and the concentration of the crosslinking agent on the copolymer. reaction. This allowed the evaluation of the influence of the sp. surface area, the particle size and the level of functionalization on catalytic efficiency of their copolymer derivs. These enantiopure poly(glycidyl methacrylate-co-ethylene glycol dimethacrylate) beads were then transformed into optically active polyamino alcs. through epoxide ring opening with different achiral or homochiral amines. In order to show the efficiency of these new copolymers, they were used as ligands of ruthenium in asym. hydrogen transfer reduction of acetophenone.

REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L49 ANSWER 18 OF 40 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2002:154340 HCAPLUS Full-text  
 DOCUMENT NUMBER: 136:369910  
 TITLE: 04,05-isopropylidene-1,2:3,6-dianhydro-D-glucitol from isosorbide  
 AUTHOR(S): Ejjiyar, S.; Saluzzo, C.; Amouroux, R.  
 CORPORATE SOURCE: USA  
 SOURCE: Organic Syntheses (2000), 77, 91-97  
 CODEN: ORSYAT; ISSN: 0078-6209  
 PUBLISHER: John Wiley & Sons, Inc.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 136:369910  
 AB 04,05-isopropylidene-1,2:3,6-dianhydro-D-glucitol was prepared from isosorbide in two steps via ring cleavage-iodination followed by cyclocondensation reactions.

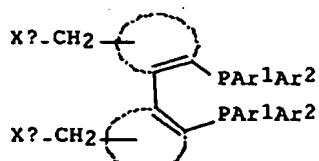
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L49 ANSWER 19 OF 40 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2002:151205 HCAPLUS Full-text  
 DOCUMENT NUMBER: 137:109319  
 TITLE: New P,N ligands with chiral nitrogen center: applications in homogeneous catalysis  
 AUTHOR(S): Saluzzo, Christine; Breuzard, Jeremy; Pellet-Rostaing, Stephane; Vallet, Martial; Le Guyader, Frederic; Lemaire, Marc  
 CORPORATE SOURCE: UMR 5622, UCBL/CPE, Laboratoire de Catalyse et Synthese Organique, Villeurbanne, 69622, Fr.  
 SOURCE: Journal of Organometallic Chemistry (2002), 643-644, 98-104  
 CODEN: JORCAI; ISSN: 0022-328X  
 PUBLISHER: Elsevier Science S.A.  
 DOCUMENT TYPE: Journal

LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 137:109319  
 AB In order to perform homogeneous asym. hydroformylation, hydrosilylation and Grignard cross-coupling reaction, a new family of P,N ligands derived from quincorine and quincoridine was developed.  
 REFERENCE COUNT: 53 THERE ARE 53 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L49 ANSWER 20 OF 40 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2001:747800 HCAPLUS Full-text  
 DOCUMENT NUMBER: 135:304020  
 TITLE: Water-soluble chiral diphosphines for catalysis of asymmetric hydrogenations by Group VIII-metal complexes  
 INVENTOR(S): Saluzzo, Christine; Lamouille, Thierry;  
 Lemaire, Marc; Ter Halle, Robert  
 PATENT ASSIGNEE(S): Rhodia Chimie, Fr.  
 SOURCE: PCT Int. Appl., 91 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: French  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

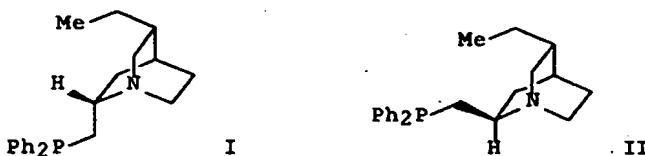
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001074828	A1	20011011	WO 2001-FR1000	20010403
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
FR 2807042	A1	20011005	FR 2000-4232	20000403
FR 2807042	B1	20020705		
EP 1268496	A1	20030102	EP 2001-921464	20010403
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2003533442	T	20031111	JP 2001-572518	20010403
US 2004102649	A1	20040527	US 2003-240572	20030423
PRIORITY APPLN. INFO.:			FR 2000-4232	A 20000403
			WO 2001-FR1000	W 20010403
OTHER SOURCE(S): GI			CASREACT 135:304020; MARPAT 135:304020	



AB The invention concerns a water-soluble compound I or an addition product with an organic or inorg. acid wherein: 'a' represents naphthyl or phenyl; and Ar1 and Ar2 independently represent a saturated or aromatic carbocyclic group; Xa, Xb independently = amino, ammonium or amino modified by a linear polyoxyalkylene chain, provided that at least one of Xa and Xb represents ammonium or modified amino. Complexes of I with transition metals Ru, Rh or Ir, with or without a diamine, can be used to catalyze asym. hydrogenation of carbonyl and C:C bonds. In general, previously degassed water is added, under Ar, to a conical reactor in which the catalyst was prepared. The substrate, e.g. Et acetoacetate, insol. in water, is added with catalyst/substrate ratio = 1/1000. The reactor is evacuated and refilled three times. The septum is then replaced by a drilled stopper and the reactor placed in an autoclave. The autoclave is purged three times with Ar and then three times with H<sub>2</sub> (40 bar). The autoclave is placed on a magnetic stirrer and heated to 50° and the agitation is maintained during the night. After cooling, the stopper is replaced by a septum then Ar is reinjected into the reactor. An aliquot of the single-phase reaction solution is analyzed by gas chromatog. For Et acetoacetate, a 100% yield of Et 3-hydroxybutanoate was obtained with  $\leq 94$  %ee, the best catalyst being (S)-6,6'-bis(ammoniomethyl)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl dibromide.

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L49 ANSWER 21 OF 40 HCAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2001:720983 HCAPLUS Full-text  
DOCUMENT NUMBER: 136:166907  
TITLE: Grignard cross-coupling catalyzed by chiral phosphino-quincorine and phosphino-quincoridine derivatives  
AUTHOR(S): Pellet-Rostaing, S.; Saluzzo, C.; Ter Halle, R.; Breuzard, J.; Vial, L.; Le Guyader, F.; Lemaire M.  
CORPORATE SOURCE: Laboratoire de Catalyse et Synthese Organique, CPE, UCBL, UMR 5622, Villeurbanne, 69622, Fr.  
SOURCE: Tetrahedron: Asymmetry (2001), 12(14), 1983-1985  
PUBLISHER: Elsevier Science Ltd.  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
OTHER SOURCE(S): CASREACT 136:166907  
GI



AB New  $\beta$ -aminoalkylphosphines I and II with a stereogenic nitrogen center have been synthesized from quincorine and quincoridine. Nickel catalysts were studied for their enantioselectivity in the asym. Kumada-Corriu reaction.

Thus, (S)-3-phenylbutene was prepared via Ni-I complex catalyzed Grignard cross-coupling of 1-phenylethylmagnesium chloride with vinyl bromide with 85% ee. Similarly, (R)-3-phenylbutene was prepared from Ni-II complex catalyzed cross-coupling reaction with 65% ee.

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

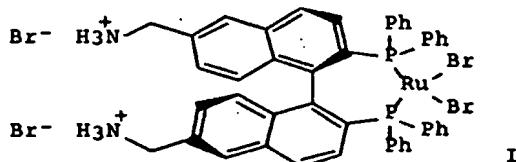
L49 ANSWER 22 OF 40 HCPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2001:372587 HCPLUS Full-text  
 DOCUMENT NUMBER: 135:166677  
 TITLE: Enantiopure poly(glycidyl methacrylate-co-ethylene glycol dimethacrylate): a new material for supported catalytic asymmetric hydrogen transfer reduction  
 Rolland, A.; Herault, D.; Touchard, F.; Saluzzo, C.; Duval, R.; Lemaire, M.  
 AUTHOR(S):  
 CORPORATE SOURCE: UMR 5622, UCBL, CPE, Laboratoire de Catalyse et Synthese Organique, Villeurbanne, 69622, Fr.  
 SOURCE: Tetrahedron: Asymmetry (2001), 12(5), 811-815  
 CODEN: TASYE3; ISSN: 0957-4166  
 PUBLISHER: Elsevier Science Ltd.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 135:166677  
 AB A novel copolymer containing chiral epoxy residues was prepared. Free radical initiated suspension copolymer of (R)- or (S)-glycidyl methacrylate with ethylene glycol dimethacrylate afforded crosslinked copolymer in high yield. Optically active polymers containing amino alc. functionalities were then formed from this copolymer through epoxide ring opening with a number of achiral and homochiral amines. It was shown that ruthenium complexes based on these new polymeric amino alc. ligands were effective catalysts for the asym. hydrogen transfer reduction of acetophenone.

REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L49 ANSWER 23 OF 40 HCPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2001:238759 HCPLUS Full-text  
 DOCUMENT NUMBER: 134:259473  
 TITLE: (+)-(RR)-{ $\pi$ -m-Phenylenedimethylenebis[tert-butyl(phenyl)phosphine]}bis(borane)  
 Lebel, Helene; Berthod, Michael;  
 Belanger-Gariepy, Francine  
 CORPORATE SOURCE: Departement de Chimie, Universite de Montreal,  
 Montreal, QC, H3C 3J7, Can.  
 SOURCE: Acta Crystallographica, Section E: Structure Reports  
 Online (2001), E57(3), o282-o284  
 CODEN: ACSEBH; ISSN: 1600-5368  
 URL: <http://journals.iucr.org/e/issues/2001/03/00/ob6030.pdf>  
 PUBLISHER: International Union of Crystallography  
 DOCUMENT TYPE: Journal; (online computer file)  
 LANGUAGE: English  
 AB The title compound, C<sub>28</sub>H<sub>42</sub>P<sub>2</sub>, was synthesized with >95% enantiomeric excess, and the relative and absolute configuration was determined. Both P atoms have distorted tetrahedral geometry, and the average B-P-C angle and P-B distance are 112.7(6) $^{\circ}$  and 1.910(6) Å, resp. Crystallog. data are given.

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L49 ANSWER 24 OF 40 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2001:85146 HCAPLUS Full-text  
 DOCUMENT NUMBER: 134:295539  
 TITLE: Hydrogenation of ethyl acetoacetate catalyzed by  
 hydrosoluble BINAP derivatives  
 AUTHOR(S): Lamouille, T.; Saluzzo, C.; ter Halle, R.;  
 Le Guyader, F.; Lemaire, M.  
 CORPORATE SOURCE: UMR 5622, CPE, UCBL, Laboratoire de Catalyse et  
 Synthese Organique, Villeurbanne, 69622, Fr.  
 SOURCE: Tetrahedron Letters (2001), 42(4), 663-664  
 CODEN: TELEAY; ISSN: 0040-4039  
 PUBLISHER: Elsevier Science Ltd.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 134:295539  
 GI



AB A new Ru hydrosol. BINAP derivative, [6,6'-bis(aminomethyl)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl]ruthenium (II) dibromide dihydrobromide I, has been synthesized. I was revealed to be enantioselective up to 94% and recyclable (at least three times) in the asym. hydrogenation of Et acetoacetate to Et (S)-3-hydroxybutanoate in a biphasic system. Poly(ethylene glycol)-substituted derivs. of 6,6'-bis(aminomethyl)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl were also prepared; the ruthenium complexes were effective catalysts for the hydrogenation of Et acetoacetate with moderate enantioselectivity, but the catalysts underwent a significant drop in effectiveness upon reuse.

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L49 ANSWER 25 OF 40 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2001:66191 HCAPLUS Full-text  
 DOCUMENT NUMBER: 134:193632  
 TITLE: Synthesis and assembly properties of a series of chiral amphiphilic dihydroxytetrahydrofuran derivatives  
 AUTHOR(S): Ejjiyar, S.; Saluzzo, C.; Massoui, M.; Amouroux, R.; Terry, N.; Coleman, A. W.  
 CORPORATE SOURCE: Laboratoire de Chimie des Agroressources, Universite Ibn Tofal, Faculte des Sciences, Kenitra, Morocco  
 SOURCE: Journal of Physical Organic Chemistry (2001), 14(1), 1-10  
 CODEN: JPOCEE; ISSN: 0894-3230  
 PUBLISHER: John Wiley & Sons Ltd.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 134:193632

AB The synthesis of a series of amphiphilic dihydroxytetrahydrofuran derivs., prepared from isomannide and isosorbide, possessing hydrophobic ether chains lengths varying from C10 to C18 attached  $\alpha$  to the THF ring and with R and S chirality at the 0 linkage carbon atom is described. The interfacial properties of these compds. were studied using a Langmuir film balance; the results showed the expected increase in film stability with increasing chain length and differences in phase behavior and film stability related to linkage chirality. The formation of colloidal dispersions of these compds. was studied both dynamic light scattering and non-contact mode atomic force microscopy.

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L49 ANSWER 26 OF 40 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2000:628204 HCAPLUS Full-text  
 DOCUMENT NUMBER: 133:223219  
 TITLE: Optically active linear polymer used as ligand in the preparation of metallic complexes designed for asymmetric catalysis  
 INVENTOR(S): Lemaire, Marc; Ter Halle, Rob; Schulz, Emmanuelle; Colasson, Benoit; Spagnol, Michel; Saluzzo, Christine; Lamouille, Thierry  
 PATENT ASSIGNEE(S): Rhodia Chimie, Fr.; Centre National de la Recherche Scientifique (C.N.R.S.)  
 SOURCE: PCT Int. Appl., 102 pp.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: French  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000052081	A1	20000908	WO 2000-FR82	20000114
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
FR 2790477	A1	20000908	FR 1999-2510	19990301
FR 2790477	B1	20010525		
EP 1161481	A1	20011212	EP 2000-900590	20000114
EP 1161481	B1	20021204		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2002538249	T	20021112	JP 2000-602702	20000114
AT 229051	T	20021215	AT 2000-900590	20000114
ES 2188499	T3	20030701	ES 2000-900590	20000114
US 6646106	B1	20031111	US 2001-914613	20011211
PRIORITY APPLN. INFO.:			FR 1999-2510	A 19990301
			WO 2000-FR82	W 20000114

AB The invention concerns optically active polymers, obtainable by polymerizing chiral diphosphines having a C2 axis of symmetry, excluding all other symmetry element, with one or several polymerizable monomers, said chiral diphosphine

consisting of a chiral compound bearing two identical functional groups capable of reacting with said polymerizable monomers. A typical polymer (I) was manufactured by polymerization of (S)-6,6'-bis(aminomethyl)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl 12 h with 2,6-tolylene diisocyanate in CH<sub>2</sub>Cl<sub>2</sub>. A typical catalyst, useful for hydrogenation of  $\alpha$ -keto esters, was manufactured by stirring I with bis(2-methallyl)-1,5-cyclooctadieneruthenium in a 1:1 I-metal mol ratio in Me<sub>2</sub>CO 30 min, adding methanolic HBr at Ru-Br ratio 1:2.3, and stirring 1 h.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L49 ANSWER 27 OF 40 HCPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2000:508689 HCPLUS Full-text  
 DOCUMENT NUMBER: 133:251824  
 TITLE: Recent progress in asymmetric heterogeneous catalysis:  
 use of polymer-supported catalysts  
 AUTHOR(S): Saluzzo, C.; ter Halle, R.; Touchard, F.;  
 Fache, F.; Schulz, E.; Lemaire, M.  
 CORPORATE SOURCE: UMR 5622, Laboratoire de Catalyse et Synthese  
 Organique, UCBL/CPE, Villeurbanne, 69622, Fr.  
 SOURCE: Journal of Organometallic Chemistry (2000), 603(1),  
 30-39  
 CODEN: JORCAI; ISSN: 0022-328X  
 PUBLISHER: Elsevier Science S.A.  
 DOCUMENT TYPE: Journal; General Review  
 LANGUAGE: English  
 AB A review with 40 refs. is given. The asym. heterogeneous catalytic reduction of carbonyl bonds by hydrogen transfer reduction or hydrogenation by means of mol. hydrogen as well as the asym. allylic substitution of allylic acetates are reported. In order to perform these reactions, new polymer-supported catalysts were employed. These polymers are either a Merrifield resin with a chiral pendent ligand or a chiral main chain polymer with ureas, thioureas and a diphosphine as functional groups. Comparison of the results obtained in these heterogeneous asym. reactions was made with those obtained in the homogeneous ones.

REFERENCE COUNT: 67 THERE ARE 67 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L49 ANSWER 28 OF 40 HCPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2000:116211 HCPLUS Full-text  
 DOCUMENT NUMBER: 132:264733  
 TITLE: Grignard reagent/borohydride combinations.  
 AUTHOR(S): Alkylation/reduction of esters  
 Hallouis, Sophie; Saluzzo, Christine;  
 Amouroux, Roger  
 CORPORATE SOURCE: Laboratoire de Chimie Organique Physique et  
 Synthétique, UMR 5622 CNRS, Université Claude Bernard  
 Lyon I, Villeurbanne, 69622, Fr.  
 SOURCE: Synthetic Communications (2000), 30(2), 313-324  
 CODEN: SYNCAC; ISSN: 0039-7911  
 PUBLISHER: Marcel Dekker, Inc.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 132:264733  
 AB The 1-step transformation of esters into secondary alcs. (70-80% yields) was performed with a Grignard reagent in the presence of Ca(BH<sub>4</sub>)<sub>2</sub> or Zn(BH<sub>4</sub>)<sub>2</sub>. Under the same conditions, vinylic Grignard reagents gave  $\gamma$ , $\delta$ -unsatd. alcs. in.

good yields through 3 successive reactions: addition to the ester carbonyl, then conjugate addition and finally reduction

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L49 ANSWER 29 OF 40 HCPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1999:343167 HCPLUS Full-text  
 DOCUMENT NUMBER: 131:19199  
 TITLE: Isosorbide and isomannide synthons: novel chiral amphiphilic molecules  
 AUTHOR(S): Ejjiyar, S.; Massoui, M.; Saluzzo, C.; Amourous, R.; Colman, A. W.  
 CORPORATE SOURCE: Lab. Chimie Agroressources, Universite Ibn Tofail, Kenitra, Morocco  
 SOURCE: Comunicaciones presentadas a la Jornadas del Comite Espanol de la Detergencia (1999), 29, 511-520  
 CODEN: CJCDD7; ISSN: 0212-7466  
 PUBLISHER: Comite Espanol de la Detergencia, Tensioactivos y Afines  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB Treatment of isosorbide and isomannide with iodotrimethylsilane induced the cleavage of one of the two rings only and provided trisubstituted tetrahydrofurans. The iodo alcs. obtained, after successive transformations in epoxides and then in alcs., constitute interesting intermediates of amphiphilic mols obtained by linkage to hydrocarbon lipophilic chains. Stable condensed monolayers of some amphiphilic mols. derivs. from isosorbide and isomannide were formed on a water subphase and Langmuir-Blodgett films were obtained. Preliminary tests for liquid crystalline properties prove to be interesting.

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L49 ANSWER 30 OF 40 HCPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1997:169559 HCPLUS Full-text  
 DOCUMENT NUMBER: 126:264253  
 TITLE: A direct single ring cleavage of isosorbide and isomannide with iodotrimethylsilane  
 AUTHOR(S): Ejjiyar, Soumeya; Saluzzo, Christine; Amouroux, Roger; Massoui, Mohamed  
 CORPORATE SOURCE: Fac. Sci., Univ. Ibn Tofail, Kenitra, Morocco  
 SOURCE: Tetrahedron Letters (1997), 38(9), 1575-1576  
 CODEN: TELEAY; ISSN: 0040-4039  
 PUBLISHER: Elsevier  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

OTHER SOURCE(S): CASREACT 126:264253

AB Treatment of isosorbide and isomannide with iodotrimethylsilane in acetonitrile in the presence of acetone induces the cleavage of only one of the two rings and provides chiral trisubstituted tetrahydrofurans.

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L49 ANSWER 31 OF 40 HCPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1995:385063 HCPLUS Full-text  
 DOCUMENT NUMBER: 123:198230  
 TITLE: Regioselective cleavage of tetrahydrofurans bearing proximate functional groups with acid iodides

AUTHOR(S): Mimerio, Pascal; Saluzzo, Christine;  
 Amouroux, Roger  
 CORPORATE SOURCE: Lab. Chimie Organique Physique Synthétique - URA CNRS  
 463, Villeurbanne, 69622, Fr.  
 SOURCE: Synthetic Communications (1995), 25(5), 613-27  
 CODEN: SYNCAN; ISSN: 0039-7911  
 PUBLISHER: Dekker  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 123:198230  
 AB Tetrahydrofurans functionalized at the C2 or C3 position (alcs., esters, amine, ether, acetal) are cleaved with  $\text{RCOCl}/\text{NaI}$  ( $\text{R} = \text{Me, tBu}$ ) in acetonitrile to give regioselectively trifunctionalized derivs. In all cases the cleavage occurs mainly or exclusively at the C-O bond the most remote from the functional group.

L49 ANSWER 32 OF 40 HCPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1995:297387 HCPLUS Full-text  
 DOCUMENT NUMBER: 123:197952  
 TITLE: Phenylthio (and phenylseleno)fluorination of alkenes and alkynes using N-phenylthio (and phenylseleno)phthalimide combined with pyridine-9HF or  $\text{Et}_3\text{N}\cdot\text{3HF}$  complexes  
 AUTHOR(S): Saluzzo, Christine; La Spina, Anna-Maria; Picq, Dominique; Alvernhe, Gerard; Anker, Daniel; Wolf, Dieter; Haufe, Guenter  
 CORPORATE SOURCE: Lab. Chim. Org., UCB Lyon I, Villeurbanne, 69622, Fr.  
 SOURCE: Bulletin de la Societe Chimique de France (1994), 131(8), 831-43  
 CODEN: BSCFAS; ISSN: 0037-8968  
 PUBLISHER: Elsevier  
 DOCUMENT TYPE: Journal  
 LANGUAGE: French  
 OTHER SOURCE(S): CASREACT 123:197952  
 AB N-Phenylthiophthalimide and N-phenylselenophthalimide combined with pyridine-9HF and  $\text{Et}_3\text{N}\cdot\text{3HF}$  complexes allow the formal addition of elements of PhSF or PhSeF across the carbon-carbon double or triple bond by a one-pot reaction. Pyridine-9HF, a strongly acidic reagent, is required to polarize the S-N bond and, therefore, gives rise to some byproducts. In contrast, selenium-containing compds. are obtained in good yields using the less acidic  $\text{Et}_3\text{N}\cdot\text{3HF}$  complex avoiding cleavage of acetals or isomerization; the formal PhSeF addition is totally regioselective with propargylic alcs.

L49 ANSWER 33 OF 40 HCPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1994:298030 HCPLUS Full-text  
 DOCUMENT NUMBER: 120:298030  
 TITLE: Regiocontrolled ring opening of 2-methyltetrahydrofuran with acid chlorides and iodides  
 AUTHOR(S): Mimerio, Pascal; Saluzzo, Christine; Amouroux, Roger  
 CORPORATE SOURCE: Lab. Chim. Org. Phys. Synth., Univ. Claude Bernard, Villeurbanne, 69622, Fr.  
 SOURCE: Tetrahedron Letters (1994), 35(10), 1553-6  
 CODEN: TELEAY; ISSN: 0040-4039  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

OTHER SOURCE(S): CASREACT 120:298030

AB Regioselective cleavage of 2-methyltetrahydrofuran with bulky acid iodides RCOI (prepared in situ by treating the RCOCl with NaI) (R = Me, Et, i-Pr, t-Bu, ClCH<sub>2</sub>, Cl<sub>2</sub>CH, F<sub>3</sub>C) gives predominantly the primary iodides I(CH<sub>2</sub>)<sub>3</sub>CHMeO<sub>2</sub>CR, whereas using acid chlorides RCOCl (R = Me, t-Bu, ClCH<sub>2</sub>, Cl<sub>2</sub>CH, F<sub>3</sub>C) and cat. ZnCl<sub>2</sub> lead to secondary chlorides RCO<sub>2</sub>(CH<sub>2</sub>)<sub>3</sub>CHMeCl almost exclusively, regardless of the nature of R.

L49 ANSWER 34 OF 40 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1994:217120 HCAPLUS Full-text

DOCUMENT NUMBER: 120:217120

TITLE: Stereocontrolled formation of functionalized erythro-1,2-diols via hydroboration of 2-alkyl-4,5-dihydrofuran

AUTHOR(S): Amouroux, Roger; Slassi, Abdelmalik; Saluzzo, Christine

CORPORATE SOURCE: Lab. Chim. Org. Phys. Synthet., Univ. Claude Bernard, Lyon I, Villeurbanne, 69622, Fr.

SOURCE: Heterocycles (1993), 36(9), 1965-9  
CODEN: HTCYAM; ISSN: 0385-5414

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 120:217120

AB Trans-2-alkyl-3-hydroxytetrahydrofurans, prepared by the stereospecific hydroboration/oxidation reaction of 2-alkyl-4,5-dihydrofurans, were regioselectively cleaved with (CH<sub>3</sub>)<sub>3</sub>SiCl/NaI to afford 1-iodo-erythro-3,4-diols in CH<sub>3</sub>CN or the corresponding acetonide derivs. in CH<sub>3</sub>COCH<sub>3</sub>.

L49 ANSWER 35 OF 40 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1992:40561 HCAPLUS Full-text

DOCUMENT NUMBER: 116:40561

TITLE: Synthesis of fluoroalkyl methyl thioethers by formal addition of methanesulfenyl fluoride to alkenes  
Haufe, Gunter; Alvernhe, Gerard; Anker, Daniel; Laurent, Andre; Saluzzo, Christine

CORPORATE SOURCE: Inst. Org. Chem., Univ. Leipzig, Leipzig, 0-7010, Germany

SOURCE: Journal of Organic Chemistry (1992), 57(2), 714-19  
CODEN: JOCEAH; ISSN: 0022-3263

DOCUMENT TYPE: Journal

LANGUAGE: English

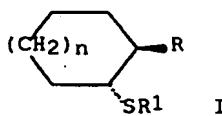
OTHER SOURCE(S): CASREACT 116:40561

AB The electrophilic anti-1,2-addition of the elements of MeSF to C:C bonds by a 1-pot reaction of MeS+Me<sub>2</sub>BF<sub>4</sub><sup>-</sup> and Et<sub>3</sub>N·3HF with various alkenes is used for the synthesis of  $\beta$ -fluoroalkyl Me sulfides. The reaction is stereospecific: cis-cycloalkenes give trans-1-fluoro-2-(methylthio)cycloalkanes, while trans-cyclododecene gives the cis product. With unsym. alkenes these reactions proceed regioselectively to produce Markovnikov-oriented fluoro sulfides. With 2,6-norbornadiene, exclusive exo attack on 1 C:C bond and subsequent transannular participation of the 2nd  $\pi$ -bond gives 2 isomeric 3,5-disubstituted nortricyclanes. With the medium-sized cis,cis-1,5-cyclooctadiene, no transannular  $\pi$ -participation is observed. In contrast, in the reaction of the monoepoxide of the diene, in addition to the simple 1,2-adduct, a transannular O participation occurs to give 3 oxabicyclic compds. Oxidation of 1-fluoro-2-(methylthio)cyclooctane by NaIO<sub>4</sub> yields the expected

mixture of 2 diastereomeric 1-fluoro-2-(methylsulfinyl)cyclooctanes, which on pyrolysis give 3-fluorocyclooctene.

L49 ANSWER 36 OF 40 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1990:514741 HCAPLUS Full-text  
 DOCUMENT NUMBER: 113:114741  
 TITLE: Phenylselenofluorination of alkynes  
 AUTHOR(S): Saluzzo, Christine; Alvernhe, Gerard; Anker, Daniel; Haufe, Guenter  
 CORPORATE SOURCE: Lab. Chim. Org., Univ. Claude Bernard, Villeurbanne, 69622, Fr.  
 SOURCE: Tetrahedron Letters (1990), 31(15), 2127-30  
 DOCUMENT TYPE: CODEN: TELEAY; ISSN: 0040-4039  
 LANGUAGE: Journal French  
 OTHER SOURCE(S): CASREACT 113:114741  
 AB The electrophilic anti-addition of the elements of PhSeF to C.tplbond.C bonds is performed in a one-pot reaction of N-phenylselenophthalimide and Et<sub>3</sub>N.3HF with disubstituted alkynes starting from monosubstituted alkynes. The reaction proceeds further to afford vinylic diselenated compds. after HF elimination. Some monoaddn. products could be transformed into vinylic or allenic fluorides.

L49 ANSWER 37 OF 40 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1990:514733 HCAPLUS Full-text  
 DOCUMENT NUMBER: 113:114733  
 TITLE: Synthesis of  $\beta$ -fluoroalkyl phenyl (or methyl) thioethers by sulfur-assisted halogen exchange with triethylamine tris(hydrofluoride)  
 AUTHOR(S): Saluzzo, C.; Alvernhe, G.; Anker, D.; Haufe, G.  
 CORPORATE SOURCE: Lab. Chim. Org., Univ. Claude Bernard - Lyon I, Villeurbanne, 69622, Fr.  
 SOURCE: Journal of Fluorine Chemistry (1990), 47(3), 467-79  
 DOCUMENT TYPE: CODEN: JFLCAR; ISSN: 0022-1139  
 LANGUAGE: Journal English  
 OTHER SOURCE(S): CASREACT 113:114733  
 GI



AB The exchange of Cl in  $\beta$ -chloroalkyl thioethers, e.g. I (R = Cl; R<sub>1</sub> = Me, Ph, n = 3; R<sub>1</sub> = Ph, n = 1, 2, 5), by F, with anomeric assistance of S, is very easily realized with the almost neutral fluorinating reagent Et<sub>3</sub>N.3HF. The one-pot reactions of alkenes with sulphenyl chlorides and subsequently with Et<sub>3</sub>N.3HF lead to the corresponding  $\beta$ -fluoroalkyl thioethers, e.g. I (R = F), in high yields.

L49 ANSWER 38 OF 40 HCPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1990:496676 HCPLUS Full-text  
 DOCUMENT NUMBER: 113:96676  
 TITLE: Phenylselenofluorination of acid-sensitive alkenes  
 AUTHOR(S): Saluzzo, Christine; Alvernhe, Gerard; Anker, Daniel; Haufe, Guenter  
 CORPORATE SOURCE: Lab. Chim. Org., Univ. Claude Bernard, Villeurbanne, 69622, Fr.  
 SOURCE: Tetrahedron Letters (1990), 31(5), 663-6  
 DOCUMENT TYPE: Journal  
 LANGUAGE: French  
 OTHER SOURCE(S): CASREACT 113:96676  
 AB  $\beta$ -Phenylseleno fluorides have been synthesized by reaction of olefins (even acid-sensitive ones) with N-phenylselenophthalimide in the presence of Et<sub>3</sub>N·3HF. Owing to the regioselectivity observed, this reaction constitutes a good method for functionalization of  $\alpha,\beta$ -unsatd. acetals.

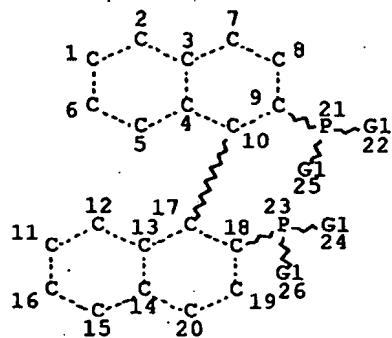
L49 ANSWER 39 OF 40 HCPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1989:552842 HCPLUS Full-text  
 DOCUMENT NUMBER: 111:152842  
 TITLE: Formal addition of methanesulfenyl fluoride to unsaturated substrates  
 AUTHOR(S): Haufe, Guenter; Alvernhe, Gerard; Anker, Daniel; Laurent, Andre; Saluzzo, Christine  
 CORPORATE SOURCE: Sekt. Chem., Karl-Marx-Univ., Leipzig, 7010, Ger. Dem. Rep.  
 SOURCE: Tetrahedron Letters (1988), 29(19), 2311-14  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 111:152842  
 AB The electrophilic anti-addition of the elements of methanesulfenyl fluoride to C-C double bonds by a one pot reaction of dimethyl(methylthio)sulfonium fluoroborate and triethylamine tris-hydrofluoride with various types of alkenes is used for the synthesis of  $\beta$ -fluoroalkyl Me thioethers.

L49 ANSWER 40 OF 40 HCPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1962:51056 HCPLUS Full-text  
 DOCUMENT NUMBER: 56:51056  
 ORIGINAL REFERENCE NO.: 56:9659i, 9660a-b  
 TITLE: Dynamic corrosion by water: effect of thermal flux on corrosion kinetics. Measurement of pH in high-temperature water  
 AUTHOR(S): Berthod, M.; Coriou, H.; Fournie, T. V.; Grall, L.; Hure, J.; LePeintre, M.; Saint-James, R.  
 SOURCE: Proc. U.N. Intern. Conf. Peaceful Uses Atomic Energy, 2nd, Geneva, 1958 (1958), 7, 445-57  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable  
 AB A loop for corrosion tests is described which provides a thermal flux of 200-250 w./sq. cm. across an Al tube. Alumina films 10-35- $\mu$  thick were produced after 1000-hr. exposures. In regions of maximum heat flux, cracks were found

in the film when its thickness was 20  $\mu$  or more. These cracks were not found at the ends of the tube where the heat flux was low and the films were only 10  $\mu$  thick. Pits that penetrated the underlying metal were randomly distributed over the surface; cavitation in the cooling H<sub>2</sub>O at hot spots on the surface was suggested as the causative agent. No evidence of intergranular attack was observed. A high-pressure loop is described for operation at 350° with heat fluxes of 300 w./sq. cm. pH electrodes were constructed for use at high pressures and temps. up to 100°. The pH of a phthalate buffer at 80° did not change when the pressure was increased to 20 kg./sq. cm.

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L2 STR



VAR G1=AK/CY

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

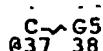
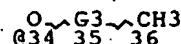
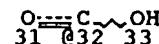
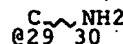
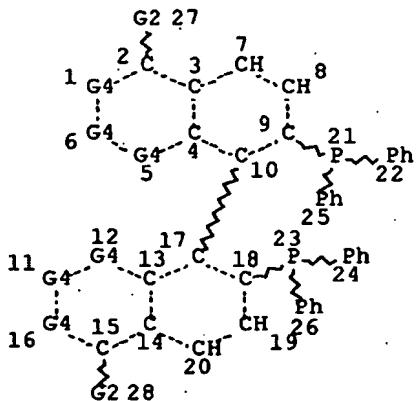
RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 26

STEREO ATTRIBUTES: NONE

L4 563 SEA FILE=REGISTRY SSS FUL L2

L14 STR



VAR G2=AK/CN/29/32

REP G3=(0-3) C

VAR G4=CH/37

VAR G5=AK/34

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

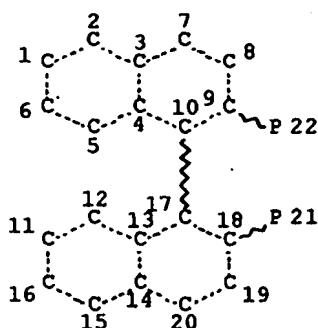
NUMBER OF NODES IS 38

STEREO ATTRIBUTES: NONE

L16 18 SEA FILE=REGISTRY SUB=L4 SSS FUL L14

L17 7 SEA FILE=HCAPLUS ABB=ON PLU=ON L16

L19 STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

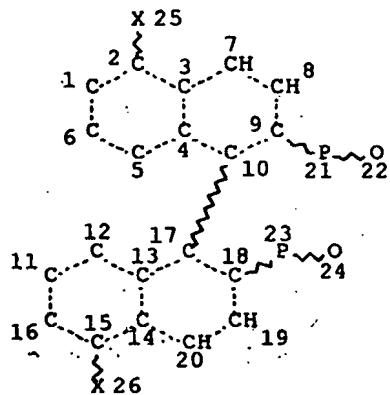
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GRAPH ATTRIBUTES:

RSPEC I

NUMBER OF NODES IS 22

STEREO ATTRIBUTES: NONE

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L23 STR

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

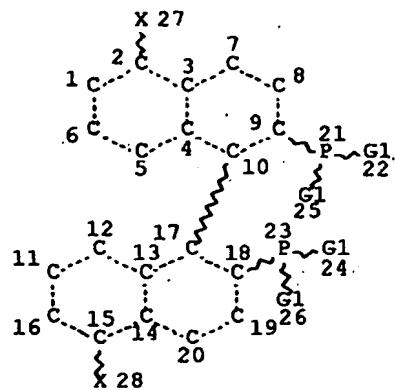
GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 26

STEREO ATTRIBUTES: NONE

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L25 550 SEA FILE=REGISTRY ABB=ON PLU=ON L21 NOT L24  
L26 STR

VAR G1=AK/CY

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 28

STEREO ATTRIBUTES: NONE

L27 5 SEA FILE=REGISTRY SUB=L4 SSS FUL L26  
 L28 540 SEA FILE=REGISTRY ABB=ON PLU=ON L4 NOT (L16 OR L27)  
 L29 1674 SEA FILE=HCAPLUS ABB=ON PLU=ON L25  
 L30 6 SEA FILE=HCAPLUS ABB=ON PLU=ON L24  
 L31 6 SEA FILE=HCAPLUS ABB=ON PLU=ON L27  
 L32 1680 SEA FILE=HCAPLUS ABB=ON PLU=ON L28  
 L33 0 SEA FILE=HCAPLUS ABB=ON PLU=ON (L30 OR L31) NOT L17  
 L34 215 SEA FILE=HCAPLUS ABB=ON PLU=ON L28/P  
 L35 211 SEA FILE=HCAPLUS ABB=ON PLU=ON L29 AND L34  
 L36 116181 SEA FILE=HCAPLUS ABB=ON PLU=ON (HALOGENATION/CV OR "HALOGENATION (L) AGENTS"/CV OR "HALOGENATING AGENTS"/CV OR "OXIDATIVE HALOGENATION"/CV OR BROMINATION/CV OR CHLORINATION/CV OR FLUORINATION/CV OR IODINATION/CV OR "HALOGENATION CATALYSTS"/CV OR "HALOGENATION KINETICS"/CV OR HALOGENS/CV) OR ?HALOGENAT?  
 L37 1280589 SEA FILE=HCAPLUS ABB=ON PLU=ON ("REDOX REACTION"/CV OR REDUCTION/CV) OR ?REDUCT?  
 L40 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L29 AND L36 AND L37  
 L41 4 SEA FILE=HCAPLUS ABB=ON PLU=ON L40 NOT (L17 OR L33)  
 L42 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L41 AND L35  
 L43 22 SEA FILE=HCAPLUS ABB=ON PLU=ON L29 AND L36 AND L32  
 L44 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L36 AND L37 AND L32  
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 L46 661 SEA FILE=HCAPLUS ABB=ON PLU=ON ("LEMAIRE M"/AU OR "LEMAIRE M C"/AU OR "LEMAIRE M J"/AU OR "LEMAIRE M V"/AU OR "LEMAIRE M VIOLAINNE"/AU OR "LEMAIRE M Y"/AU) OR ("LEMAIRE MARC"/AU OR "LEMAIRE MARC LIONEL"/AU)  
 L47 35 SEA FILE=HCAPLUS ABB=ON PLU=ON ("SALUZZO C"/AU OR "SALUZZO CHRISTINE"/AU)  
 L48 15 SEA FILE=HCAPLUS ABB=ON PLU=ON ("BERTHOD M"/AU OR "BERTHOD MICHAEL"/AU OR "BERTHOD MIKAEEL"/AU OR "BERTHOD MIKAEL"/AU)  
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 L50 20 SEA FILE=HCAPLUS ABB=ON PLU=ON L46 AND (L29 OR L32)  
 L51 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L50 NOT (L17 OR L33 OR L42 OR L45 OR L49)

=&gt; d ibib abs hitstr 151 1-5

L51 ANSWER 1 OF 5 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2001:67888 HCAPLUS Full-text  
 DOCUMENT NUMBER: 134:281219  
 TITLE: Synthesis and evaluation of poly-NAP-Ru, an heterogeneous enantioselective catalyst  
 AUTHOR(S): Ter Hallea, Rob; Schulza, Emmanuelle; Spagnol, Michel; Lemaire, Marc  
 CORPORATE SOURCE: Laboratoire de Catalyse et Synthèse Organique, IRC/UCBL/CPE Lyon, Villeurbanne, 69622, Fr.  
 SOURCE: Comptes Rendus de l'Academie des Sciences, Serie IIc: Chimie (2000), 3(7), 553-556  
 CODEN: CASCFN; ISSN: 1387-1609  
 PUBLISHER: Editions Scientifiques et Médicales Elsevier  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB An heterogeneous catalyst was synthesized by polymerization of a BINAP derivative followed by complexation with ruthenium. This catalyst showed high enantioselectivities for the hydrogenation of various substrates such as dehydroaminoacids,  $\alpha$ -ketoesters, olefins,  $\beta$ -ketoesters and ketones. The catalyst may be re-used four times with negligible loss of enantioselectivity and activity.

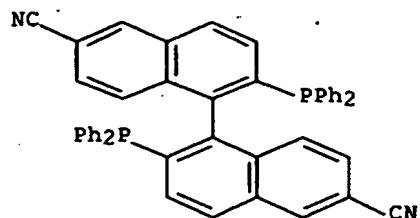
IT 263163-79-7P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(in preparation of bis(aminomethyl)binaphthylidiphenylphosphine toluene diisocyanate oligomer as stereoselective hydrogenation catalyst)

RN 263163-79-7 HCPLUS

CN [1,1'-Binaphthalene]-6,6'-dicarbonitrile, 2,2'-bis(diphenylphosphino)-, (1S)- (9CI) (CA INDEX NAME)



IT 263172-38-9DP, isopropoxy-terminated, complex with ruthenium  
263173-51-9DP, isopropoxy-terminated, complex with ruthenium

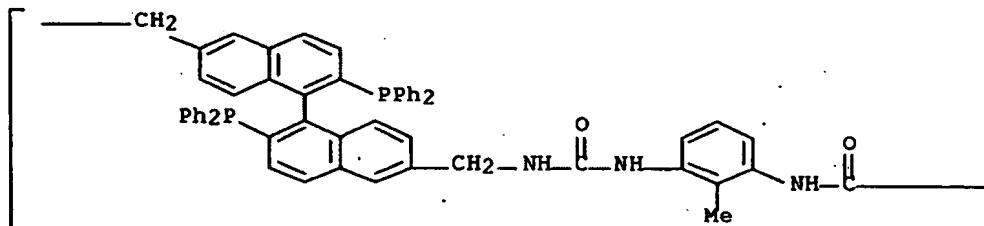
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

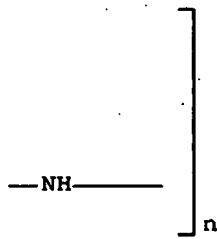
(oligomeric; preparation of bis(aminomethyl)binaphthylidiphenylphosphine toluene diisocyanate oligomer as stereoselective hydrogenation catalyst)

RN 263172-38-9 HCPLUS

CN Poly[iminocarbonylimino(2-methyl-1,3-phenylene)iminocarbonyliminomethylene [(1S)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-6,6'-diyl]methylene] (9CI) (CA INDEX NAME)

PAGE 1-A





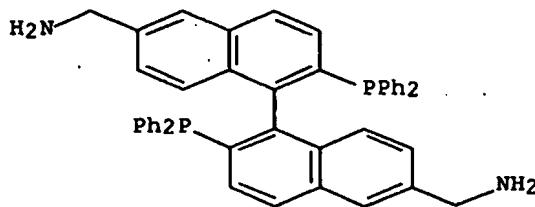
RN 263173-51-9 HCAPLUS

CN [1,1'-Binaphthalene]-6,6'-dimethanamine, 2,2'-bis(diphenylphosphino)-, (1S)-, polymer with 1,3-diisocyanato-2-methylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 263163-80-0

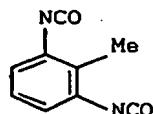
CMF C46 H38 N2 P2



CM 2

CRN 91-08-7

CMF C9 H6 N2 O2



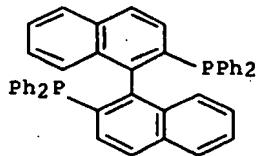
IT 76189-56-5

RL: CAT (Catalyst use); USES (Uses)

(preparation of bis(aminomethyl)binaphthyl diphenylphosphine toluene diisocyanate oligomer as stereoselective hydrogenation catalyst)

RN 76189-56-5 HCAPLUS

CN Phosphine, 1,1'-(1S)-[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl- (CA INDEX NAME)]

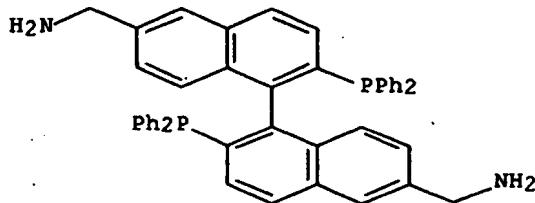


IT 263163-80-0P

RL: CAT (Catalyst use); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (preparation of bis(aminomethyl)binaphthylidiphenylphosphine toluene diisocyanate oligomer as stereoselective hydrogenation catalyst)

RN 263163-80-0 HCAPLUS

CN [1,1'-Binaphthalene]-6,6'-dimethanamine, 2,2'-bis(diphenylphosphino)-, (1S)- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L51 ANSWER 2 OF 5 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2000:592728 HCAPLUS Full-text

DOCUMENT NUMBER: 133:177311

TITLE: Preparation of chiral biphenyl- and binaphthyl-based diphosphines and use in asymmetric catalysis

INVENTOR(S): Lemaire, Marc; Ter Halle, Rob; Schulz, Emmanuelle; Spagnol, Michel

PATENT ASSIGNEE(S): Rhodia Chimie, Fr.; Centre National De La Recherche Scientifique (C.N.R.S.)

SOURCE: PCT Int. Appl., 58 pp.  
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: French

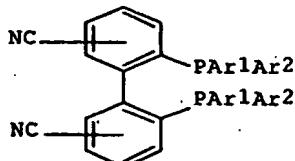
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

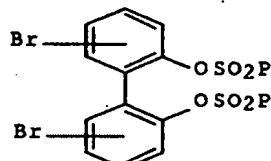
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000049028	A1	20000824	WO 2000-FR83	20000114
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE,				

DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF,  
CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG  
 FR 2789992 A1 20000825 FR 1999-2119 19990219  
 FR 2789992 B1 20010525  
 EP 1153031 A1 20011114 EP 2000-900591 20000114  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, LV, FI, RO  
 JP 2002537305 T 20021105 JP 2000-599766 20000114  
 US 6610875 B1 20030826 US 2001-913831 20011211  
 US 2003225297 A1 20031204 US 2003-454510 20030605  
 PRIORITY APPLN. INFO.: FR 1999-2119 A 19990219  
 GI WO 2000-FR83 W 20000114  
 US 2001-913831 A3 20011211

OTHER SOURCE(S): CASREACT 133:177311; MARPAT 133:177311  
 GI



I



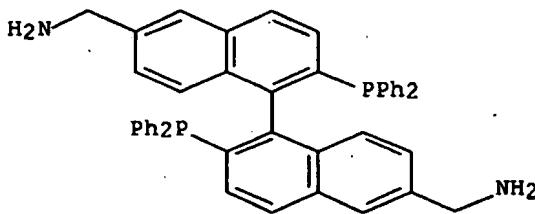
II

AB The invention concerns a method for preparing I (optionally further substituted biphenyl may also be binaphthyl; Ar1, Ar2 independently represent a saturated or aromatic carbocyclic group, optionally substituted). The preparation method comprises several steps: (i) bromination of an enantiomer of 2,2'-bisphenol or 2,2'-binaphthol, (ii) esterification using a sulfonic acid or an activated form (e.g. triflic anhydride), (iii) substitution of Br by cyano, (iv) coupling with XPAr1Ar2 (X = H, halogen). The dicyano derivs. can be reduced to aminomethyl derivs. and both can be incorporated into transition metal complexes for asym. catalysis. For example, an hydrogenation catalyst prepared from bis(2-methylallyl)(cyclooctadiene)ruthenium and (S)-6,6'-bis(aminomethyl)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl gave 100% Me 3-hydroxybutanoate from Me acetoacetate with an 100% ee. This catalyst system also is effective in the hydrogenation of acetophenone (72% yield with 18% ee compared to <1% yield and 0% ee for the analogous complex containing a 2,2'-bis(diphenylphosphino)-1,1'-binaphthyl enantiomer). The dicyano derivs. can also be converted to dicarboxy derivs. II (optionally further substituted biphenyl may also be binaphthyl; P = aliphatic hydrocarbyl, carbocyclic aryl, aliphatic group substituted by carbocyclic aryl; P neither CF3 nor p-tolyl) are also claimed.

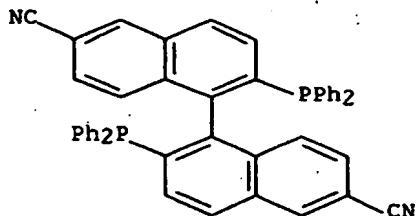
IT 263163-80-0P, (S)-6,6'-Bis(aminomethyl)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl  
 RL: CAT (Catalyst use); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (preparation and ligand in transition metal complex asym. catalysts)

RN 263163-80-0 HCPLUS

CN [1,1'-Binaphthalene]-6,6'-dimethanamine, 2,2'-bis(diphenylphosphino)-, (1S)- (9CI) (CA INDEX NAME)



IT 263163-79-7P, (S)-6,6'-Dicyano-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl  
 RL: CAT (Catalyst use); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (preparation, cyano reduction and ligand in transition metal complex asym. catalysts)  
 RN 263163-79-7 HCAPLUS  
 CN [1,1'-Binaphthalene]-6,6'-dicarbonitrile, 2,2'-bis(diphenylphosphino)-, (1S)- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

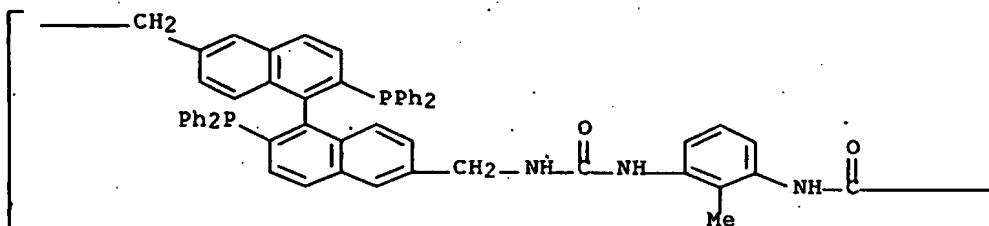
L51 ANSWER 3 OF 5 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2000:364691 HCAPLUS Full-text  
 DOCUMENT NUMBER: 133:134856  
 TITLE: Heterogeneous catalytic hydrogenation of olefinic substrates by poly-NAP  
 AUTHOR(S): ter Halle, Rob; Schulz, Emmanuelle; Spagnol, Michel; Lemaire, Marc  
 CORPORATE SOURCE: Laboratoire de catalyse et synthese organique, UCBL, Villeurbanne, 69622, Fr.  
 SOURCE: Tetrahedron Letters (2000), 41(18), 3323-3326  
 CODEN: TELEAY; ISSN: 0040-4039  
 PUBLISHER: Elsevier Science Ltd.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 133:134856  
 AB With previously described poly-NAP, a polyurea from methylamine-functionalized BINAP and MeC<sub>6</sub>H<sub>3</sub>-2,6-(NCO)<sub>2</sub>, various olefinic substrates were reduced with selectivities comparable to those obtained by BINAP. For substrates which contained a Me ester, the selectivities were higher than those observed for their carboxylic acid analogs.  
 IT 263172-38-9  
 RL: CAT (Catalyst use); USES (Uses)

(stereoselective heterogeneous catalytic hydrogenation of olefins by BINAP-based polyurea)

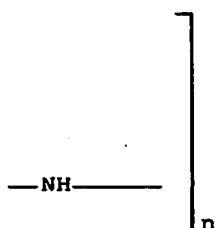
RN 263172-38-9 HCPLUS

CN Poly[iminocarbonylimino(2-methyl-1,3-phenylene)iminocarbonyliminomethylene [(1S)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-6,6'-diyl]methylene] (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L51 ANSWER 4 OF 5 HCPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2000:358893 HCPLUS Full-text

DOCUMENT NUMBER: 133:135053

TITLE: Poly-NAP as ligand for the asymmetric hydrogenation of ketones

AUTHOR(S): ter Halle, Rob; Schulz, Emmanuelle; Spagnol, Michel; Lemaire, Marc

CORPORATE SOURCE: Laboratoire de Catalyse et Synthese Organique, UMR 5622, UCBL, CPE, Villeurbanne, 69622, Fr.

SOURCE: Synlett (2000), (5), 680-682

CODEN: SYNLES; ISSN: 0936-5214

PUBLISHER: Georg Thieme Verlag

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 133:135053

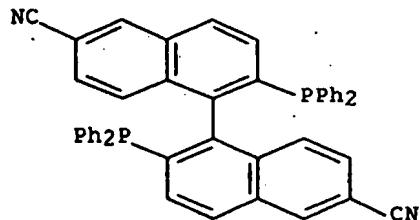
AB A new heterogeneous catalytic system is described incorporating the BINAP structure as coordinating agent. In the presence of chiral diamines as auxiliaries, this ligand is efficient for the ruthenium catalyzed asym. hydrogenation of acetophenone (e.e. 68%) and can be reused several times

without loss of selectivity and activity. The best e.e. (96%) is obtained for the reduction of 1'-acetonaphthone.

IT 263163-79-7  
 RL: CAT (Catalyst use); USES (Uses)  
 (poly-NAP as ligand for the asym. hydrogenation of aryl ketones)

RN 263163-79-7 HCPLUS

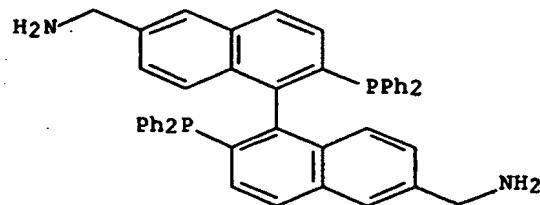
CN [1,1'-Binaphthalene]-6,6'-dicarbonitrile, 2,2'-bis(diphenylphosphino)-,  
 (1S)- (9CI) (CA INDEX NAME)



IT 263163-80-0P  
 RL: CAT (Catalyst use); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (poly-NAP as ligand for the asym. hydrogenation of aryl ketones)

RN 263163-80-0 HCPLUS

CN [1,1'-Binaphthalene]-6,6'-dimethanamine, 2,2'-bis(diphenylphosphino)-,  
 (1S)- (9CI) (CA INDEX NAME)

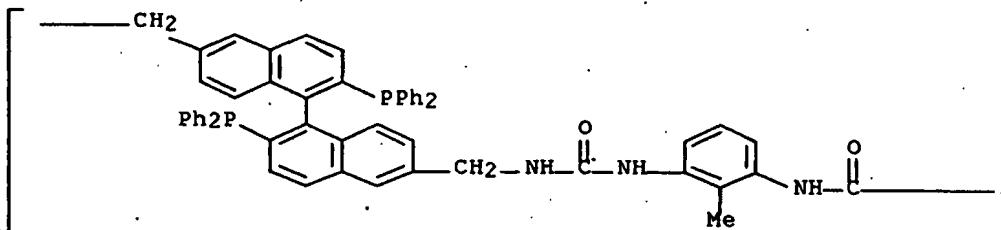


IT 263172-38-9P, Poly-NAP  
 RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);  
 USES (Uses)  
 (poly-NAP as ligand for the asym. hydrogenation of aryl ketones)

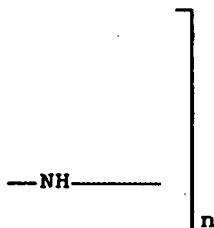
RN 263172-38-9 HCPLUS

CN Poly[iminocarbonylimino(2-methyl-1,3-phenylene)iminocarbonyliminomethylene  
 [(1S)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-6,6'-diyl]methylene]  
 (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

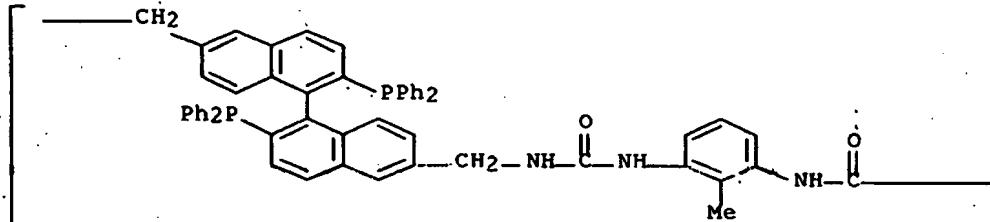
L51 ANSWER 5 OF 5 HCPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2000:100193 HCPLUS Full-text  
 DOCUMENT NUMBER: 132:264944  
 TITLE: "Diam-BINAP"; a highly efficient monomer for the synthesis of heterogeneous enantioselective catalysts  
 Ter Halle, Rob; Colasson, Benoist; Schulz, Emmanuel; Spagnol, Michel; Lemaire, Marc  
 AUTHOR(S):  
 CORPORATE SOURCE: Laboratoire de Catalyse et Synthese Organique, IRC, UCBL, CPE, Villeurbanne, 69622, Fr.  
 SOURCE: Tetrahedron Letters (2000), 41(5), 643-646  
 CODEN: TELEAY; ISSN: 0040-4039  
 PUBLISHER: Elsevier Science Ltd.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 132:264944  
 AB 6,6'-Bis(aminomethyl)-BINAP (diam-BINAP) was prepared from (S)-BINOL by bromination, OH protection, reaction with CuCN and HPPH<sub>2</sub>, and reduction of the nitrile groups. The polyaddn. of this monomer with 2,6-diisocyanatotoluene gave the oligomer (poly-NAP), with a polymerization degree of 8. The ruthenium complex of this polymer proved to be a very efficient heterogeneous catalyst for the hydrogenation of  $\beta$ -keto esters (99% ee, 0.1 mol% of catalyst). Furthermore the catalyst could be easily reused four times by simple filtration without loss of activity or enantioselectivity.  
 IT 263172-38-9DP, isopropoxy-terminated 263173-51-9DP, isopropoxy-terminated.  
 RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(oligomeric; preparation of bis(aminomethyl)binaphthylidiphenylphosphine toluene diisocyanate oligomer as stereoselective hydrogenation catalyst)

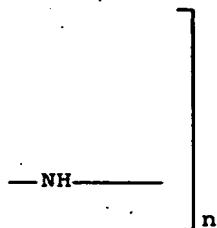
RN 263172-38-9 HCAPLUS

CN Poly[iminocarbonylimino(2-methyl-1,3-phenylene)iminocarbonyliminomethylene [(1S)-2,2'-bis(diphenylphosphino)[1,1'-binaphthalene]-6,6'-diyl]methylene] (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



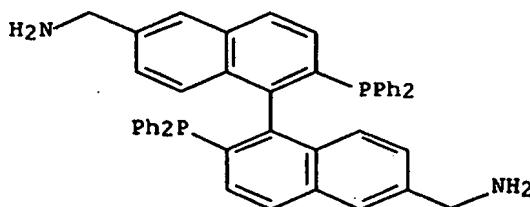
RN 263173-51-9 HCAPLUS

CN [1,1'-Binaphthalene]-6,6'-dimethanamine, 2,2'-bis(diphenylphosphino)-, (1S)-, polymer with 1,3-diisocyanato-2-methylbenzene (9CI) (CA INDEX NAME)

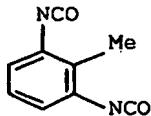
CM 1

CRN 263163-80-0

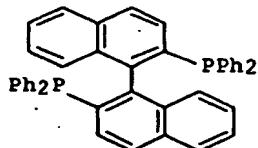
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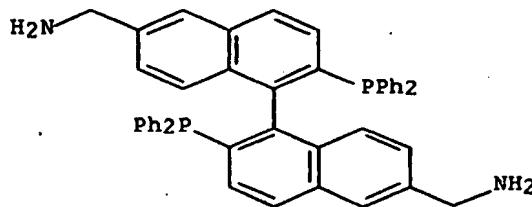
CM 2

CRN 91-08-7  
CMF C9 H6 N2 O2

IT 76189-56-5  
 RL: CAT (Catalyst use); USES (Uses)  
 (preparation of bis(aminomethyl)binaphthylidiphenylphosphine toluene diisocyanate oligomer as stereoselective hydrogenation catalyst)  
 RN 76189-56-5 HCPLUS  
 CN Phosphine, 1,1'-(1S)-[1,1'-binaphthalene]-2,2'-diyl]bis[1,1-diphenyl-  
 (CA INDEX NAME)]

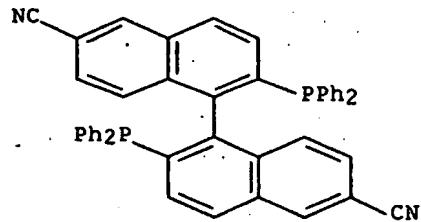


IT 263163-80-0P  
 RL: CAT (Catalyst use); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (preparation of bis(aminomethyl)binaphthylidiphenylphosphine toluene diisocyanate oligomer as stereoselective hydrogenation catalyst)  
 RN 263163-80-0 HCPLUS  
 CN [1,1'-Binaphthalene]-6,6'-dimethanamine, 2,2'-bis(diphenylphosphino)-, (1S)- (9CI) (CA INDEX NAME)



IT 263163-79-7P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation of bis(aminomethyl)binaphthylidiphenylphosphine toluene diisocyanate oligomer as stereoselective hydrogenation catalyst)

RN 263163-79-7 HCPLUS

CN [1,1'-Binaphthalene]-6,6'-dicarbonitrile, 2,2'-bis(diphenylphosphino)-,  
(1S)- (9CI) (CA INDEX NAME)

REFERENCE COUNT:

14

THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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